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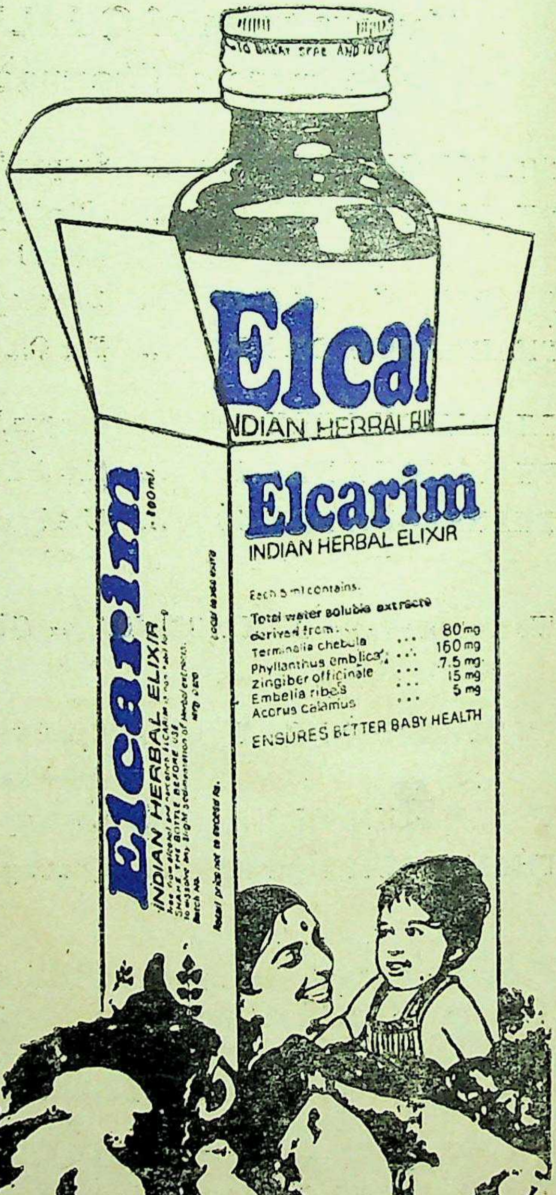
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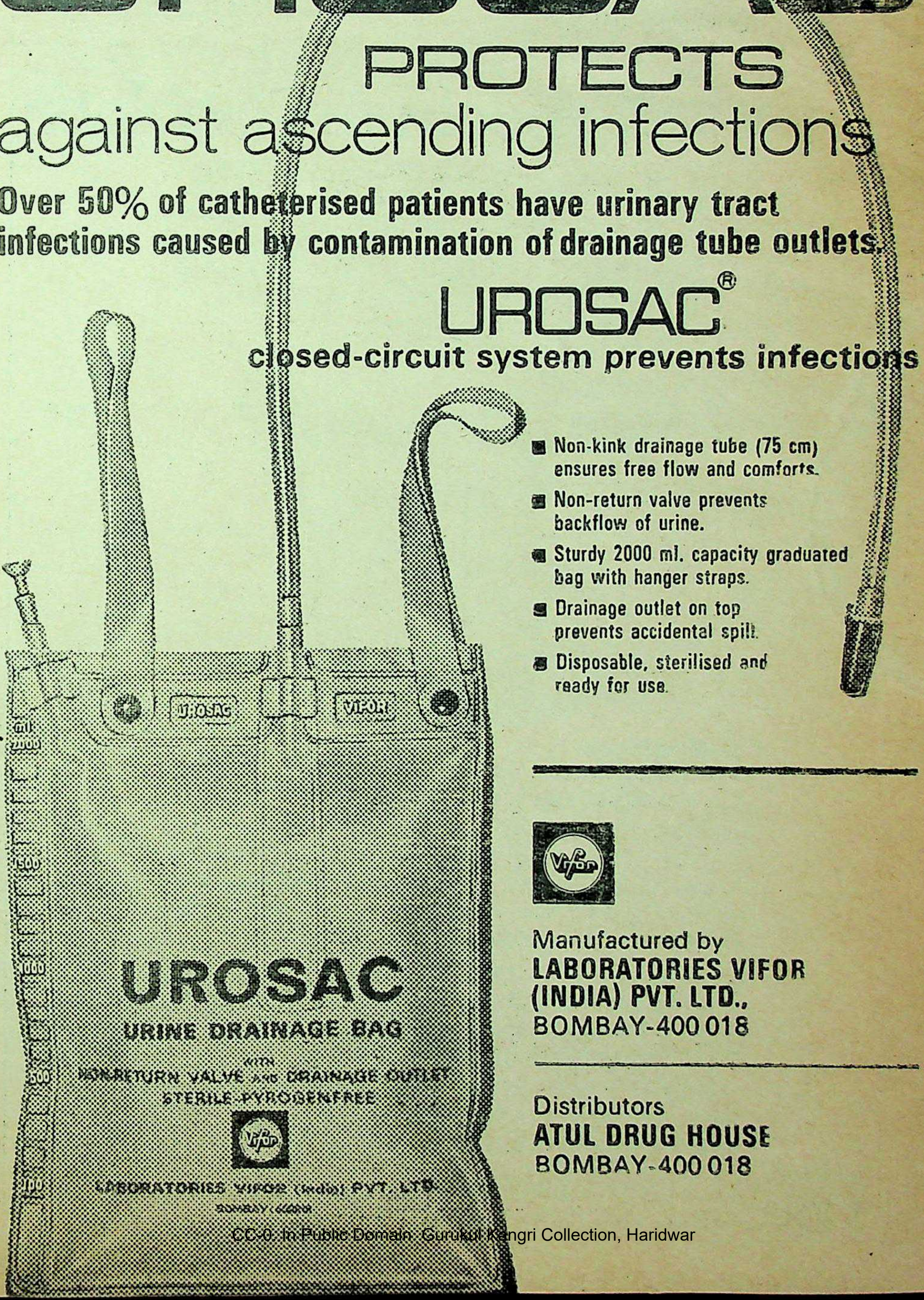
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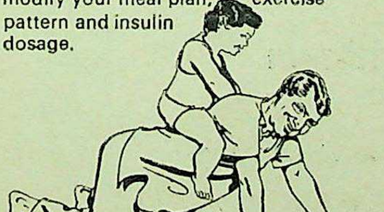

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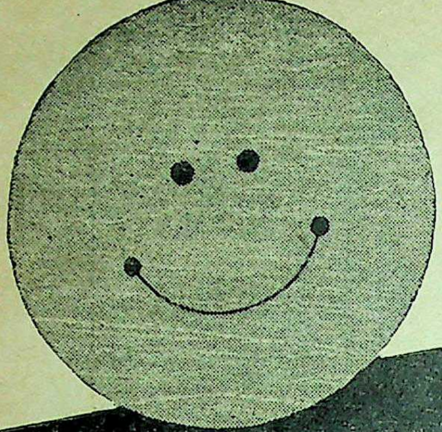

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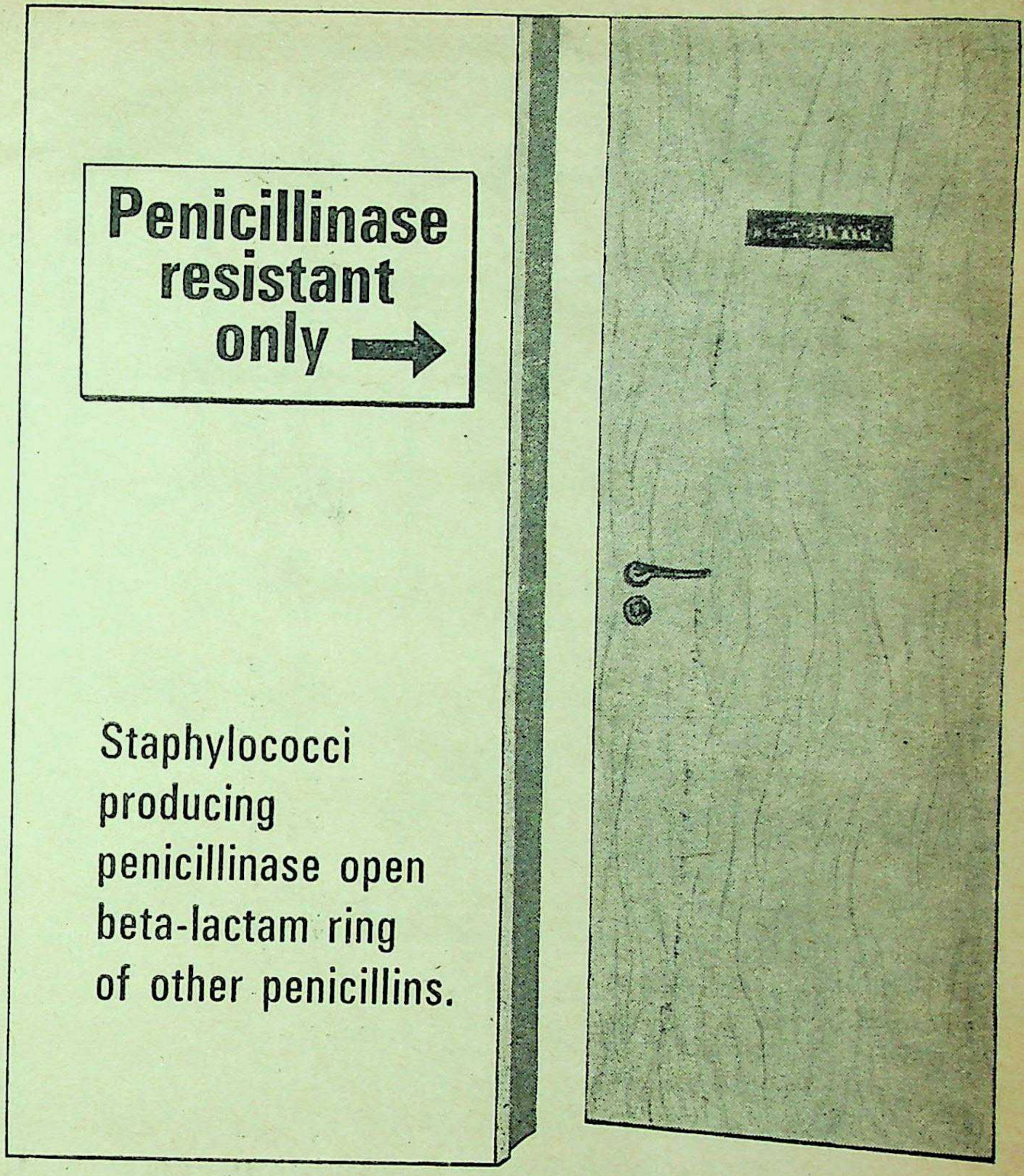
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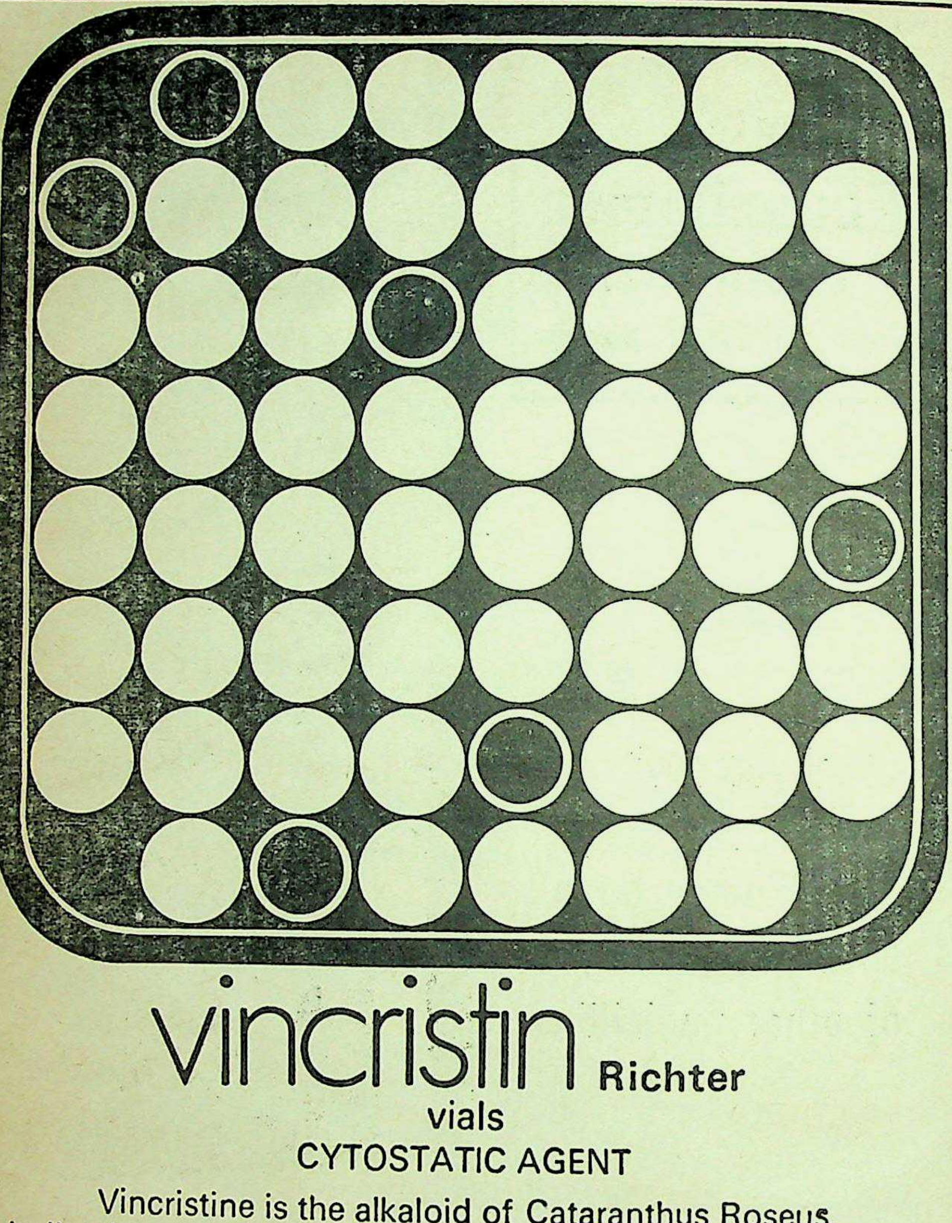

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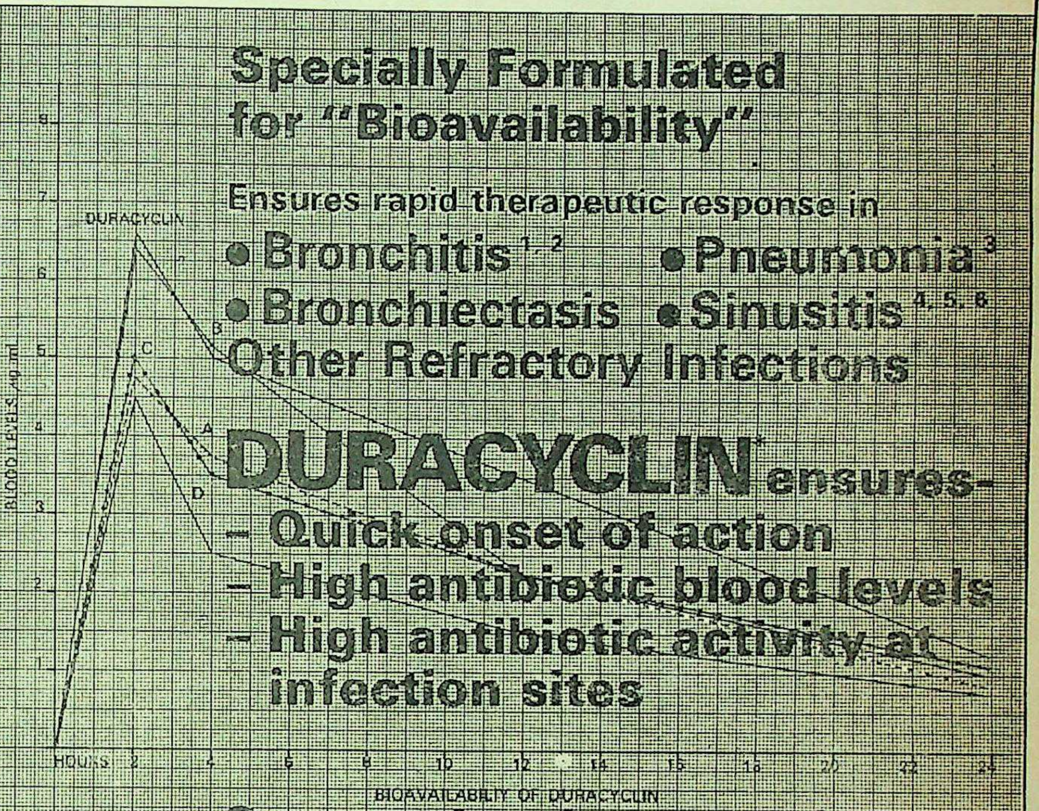

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4. *R.H. Liss & J.C. Norman. Chemotherapy 21 (Suppl.) 27-35 (1975).*
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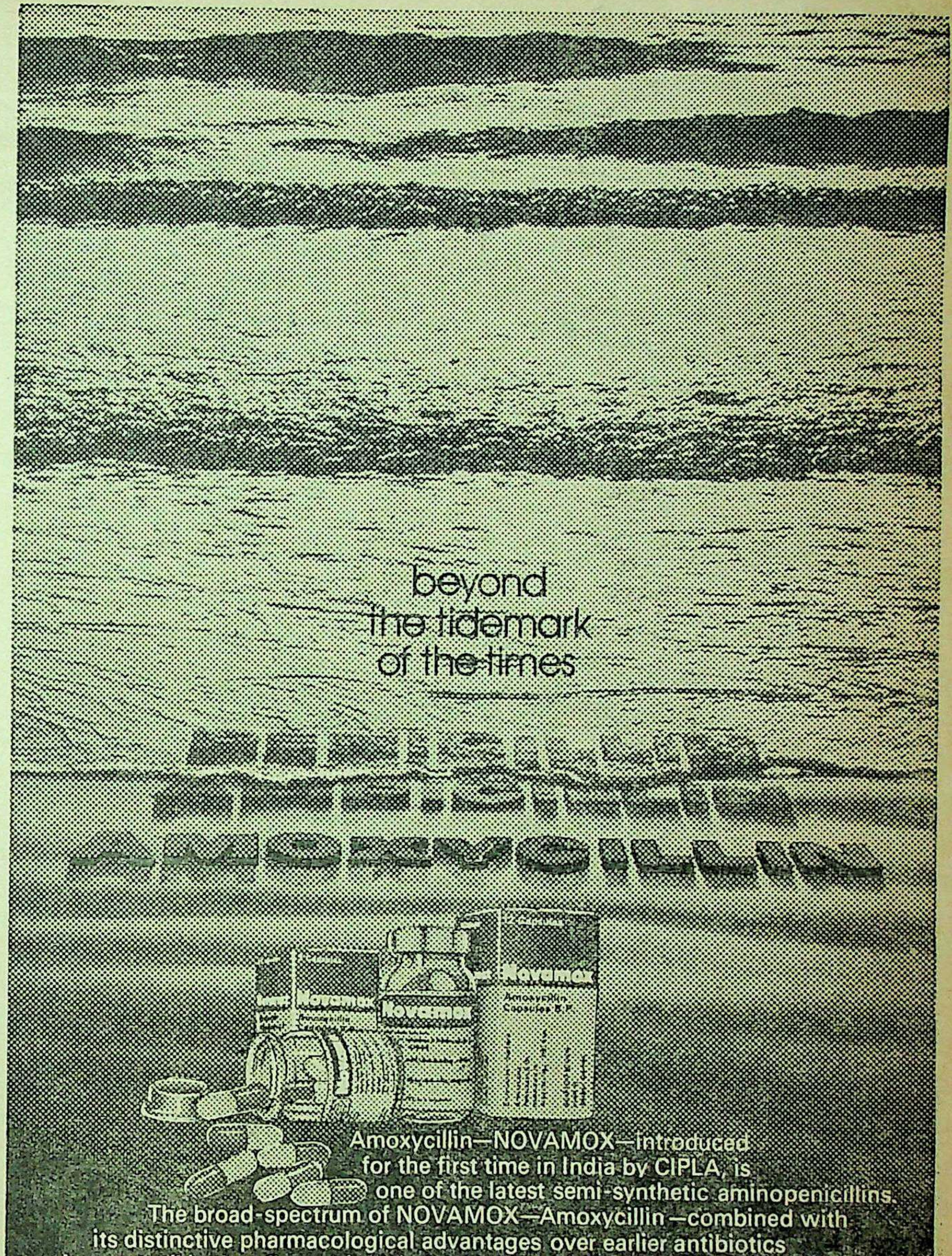
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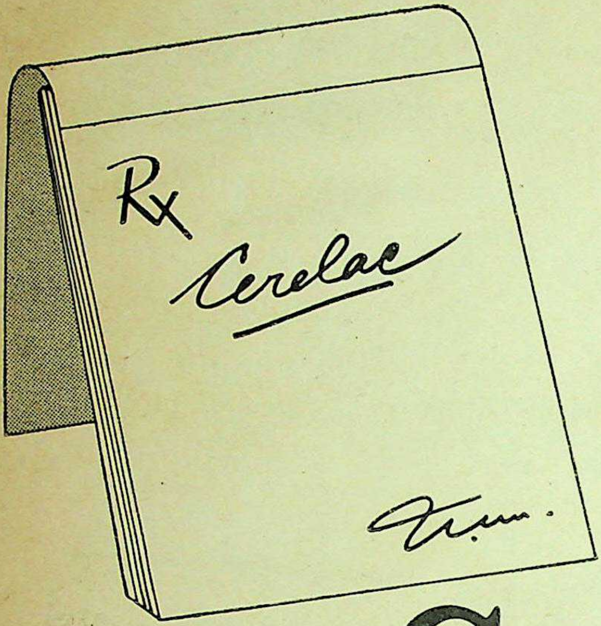

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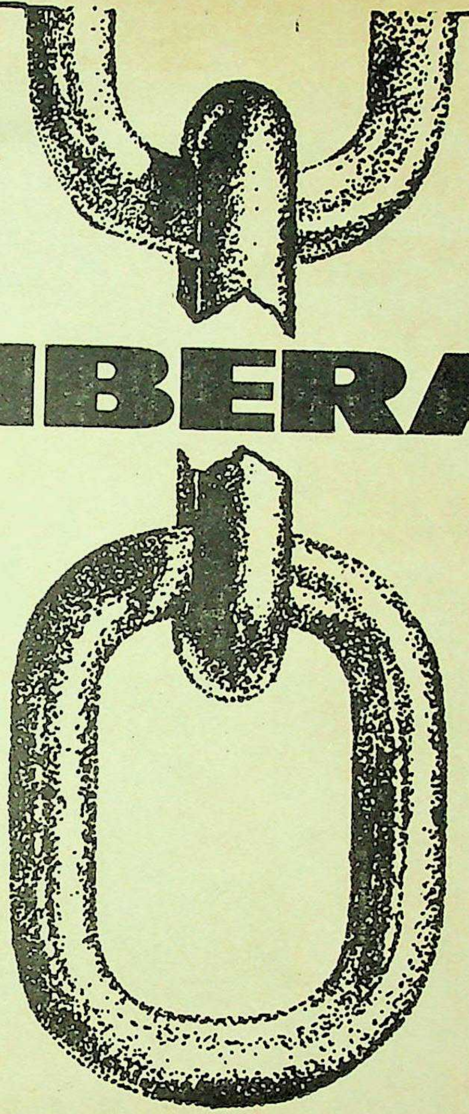

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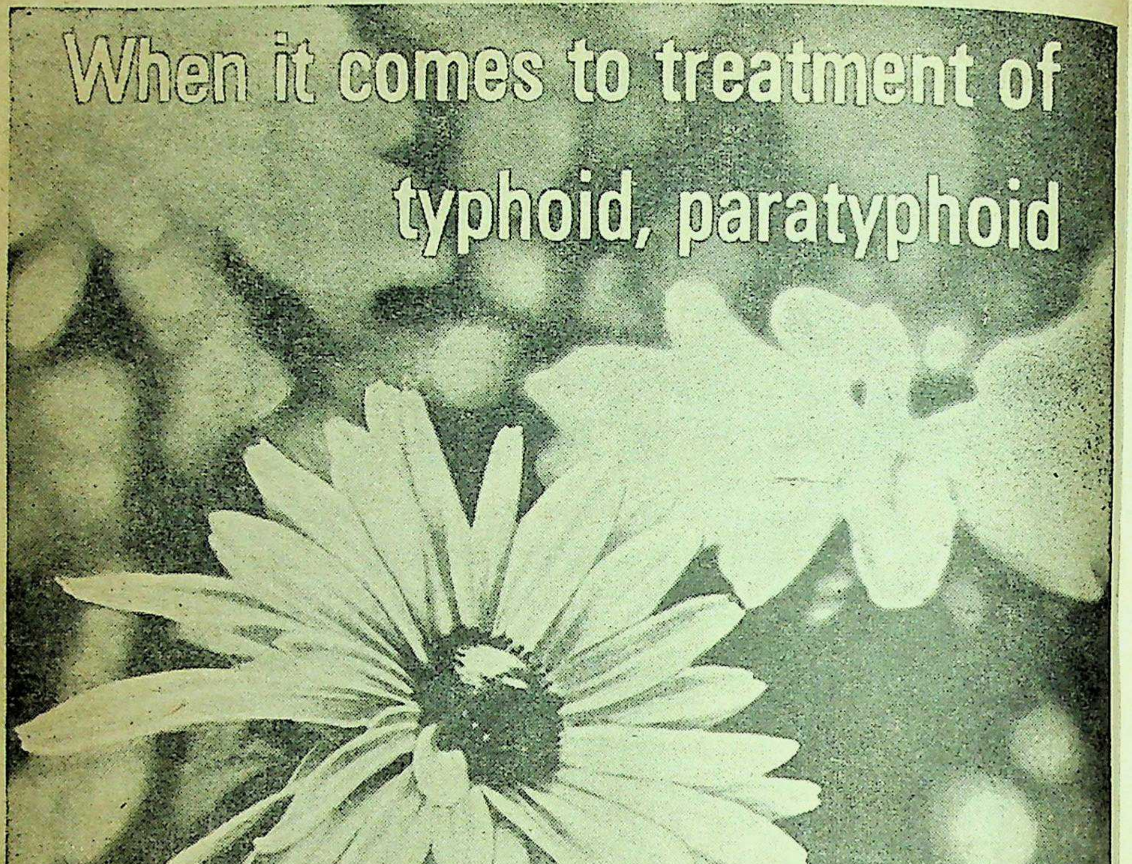
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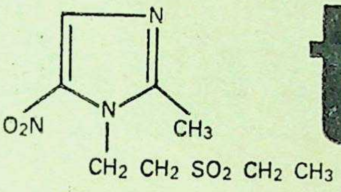

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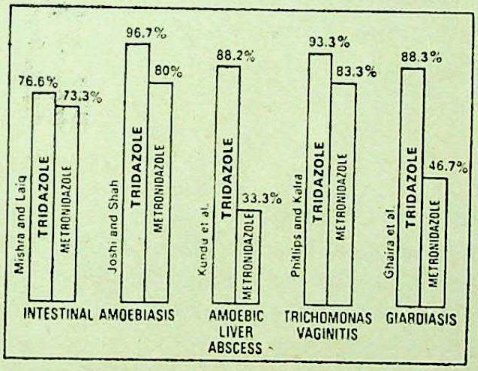

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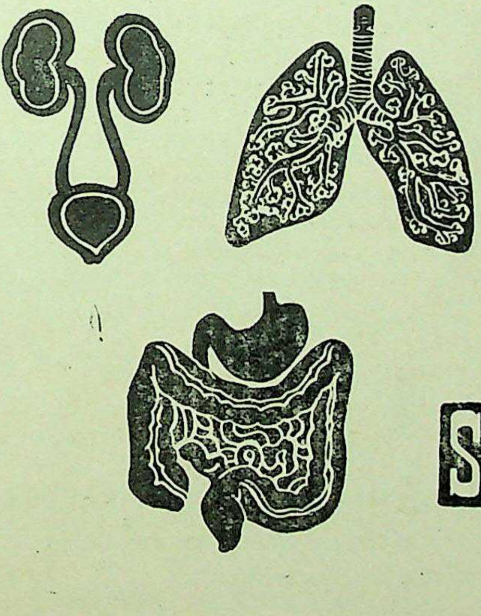

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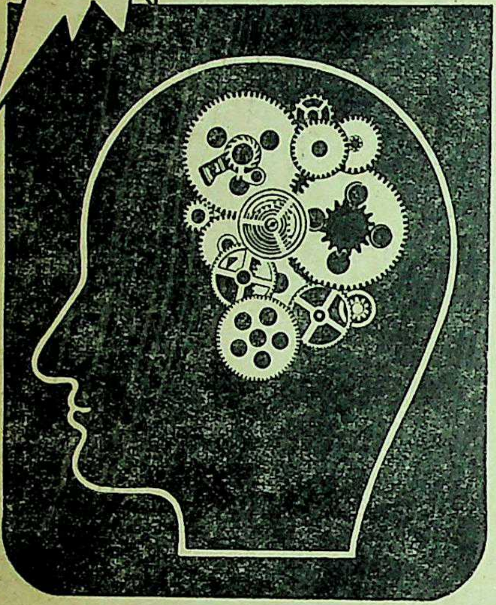

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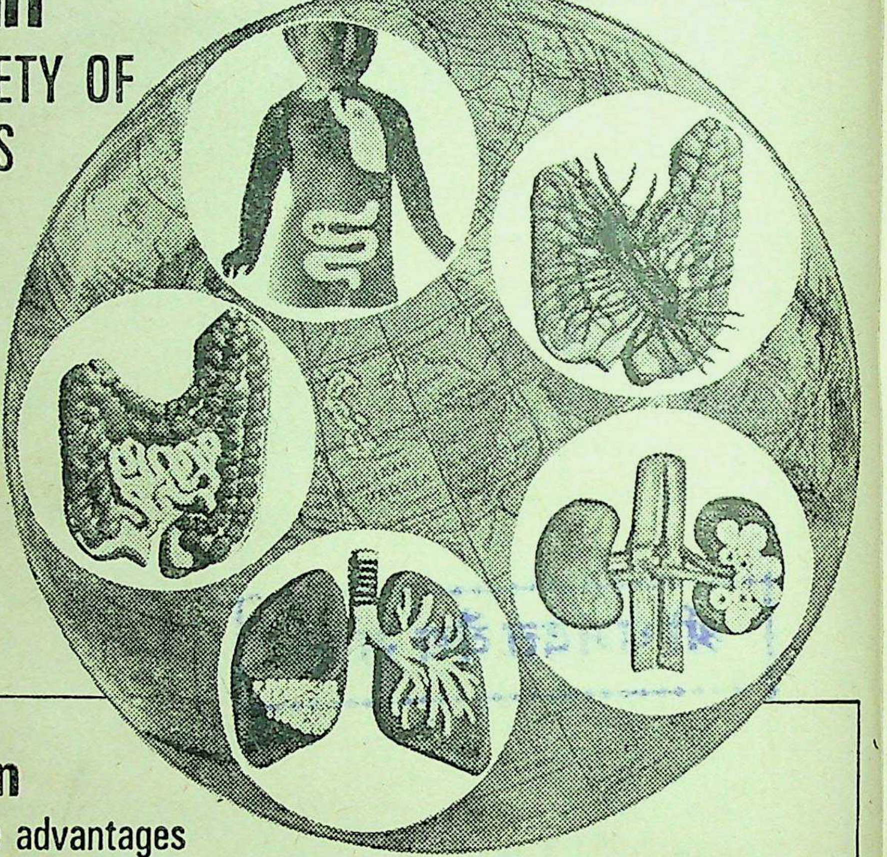

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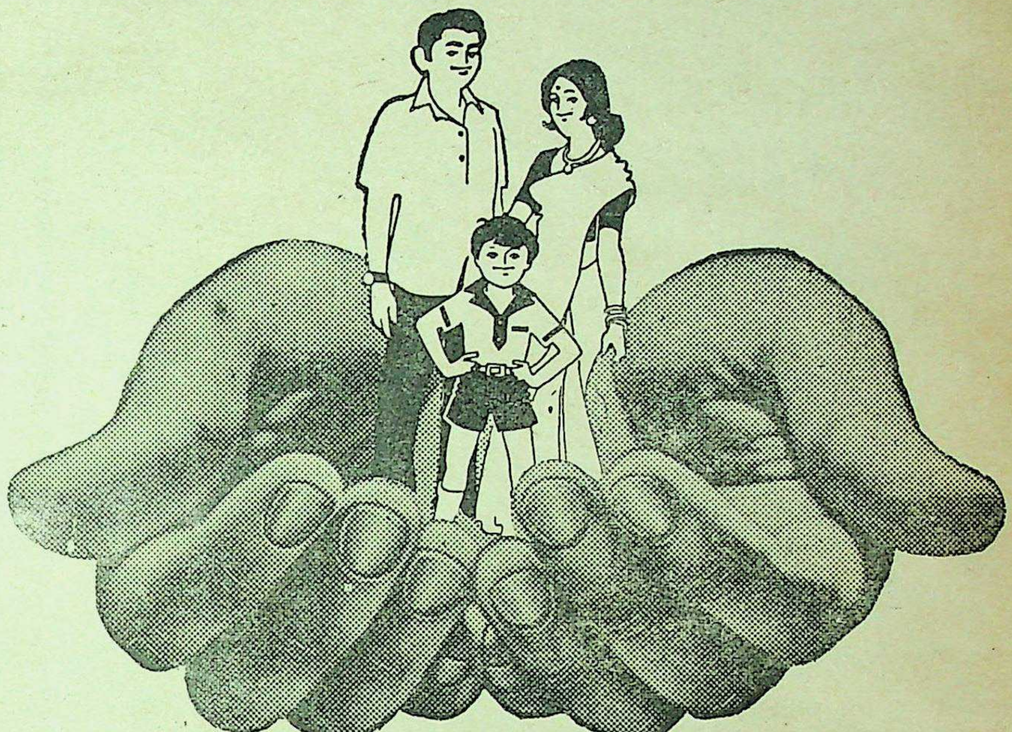

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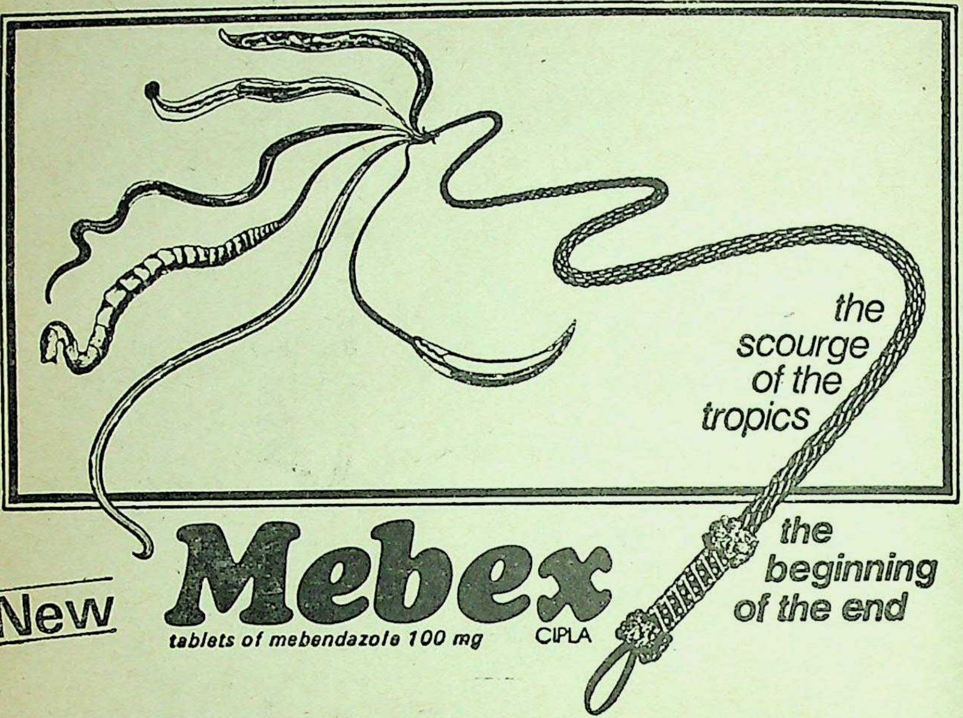
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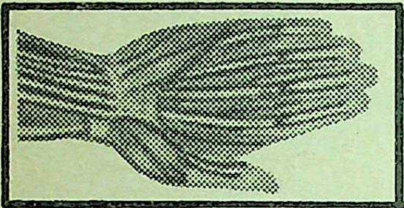

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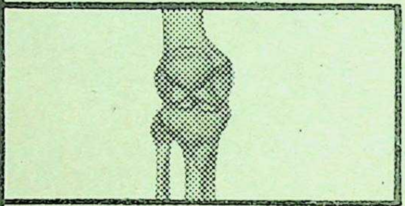

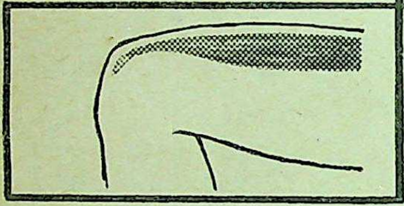

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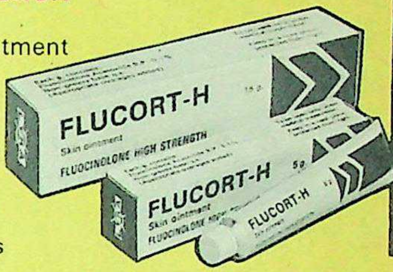

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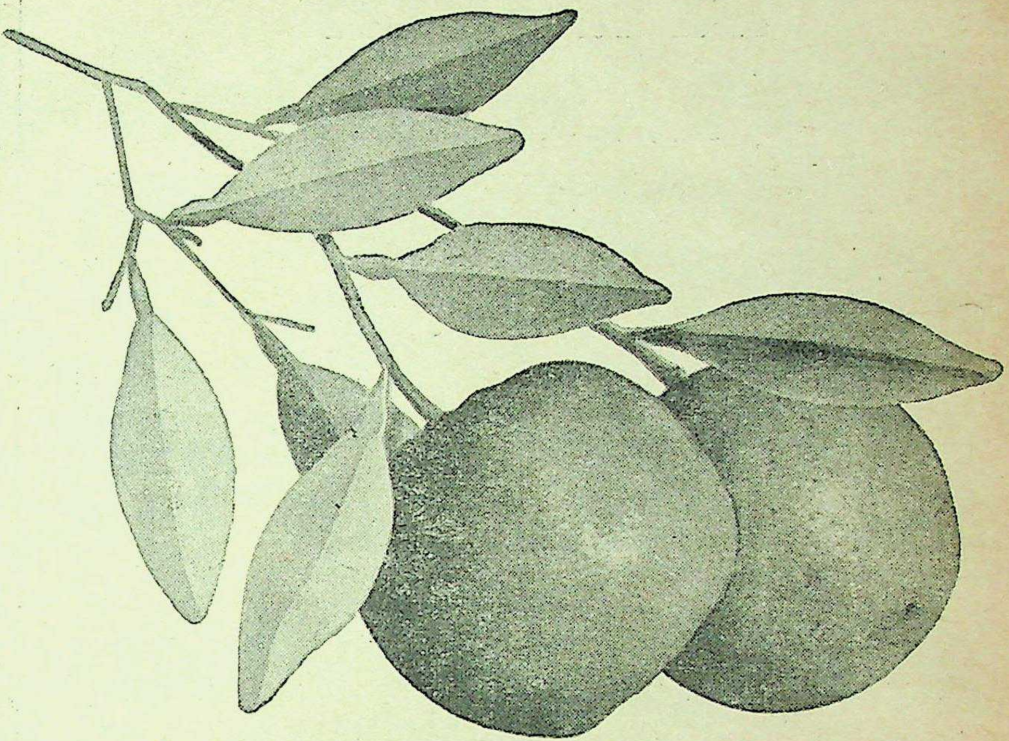

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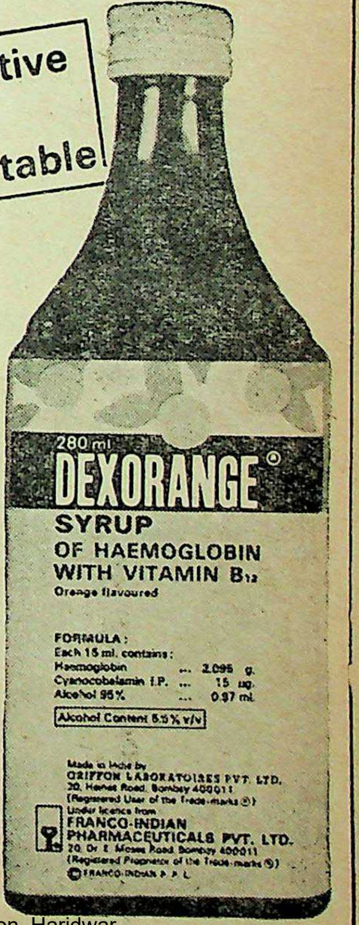
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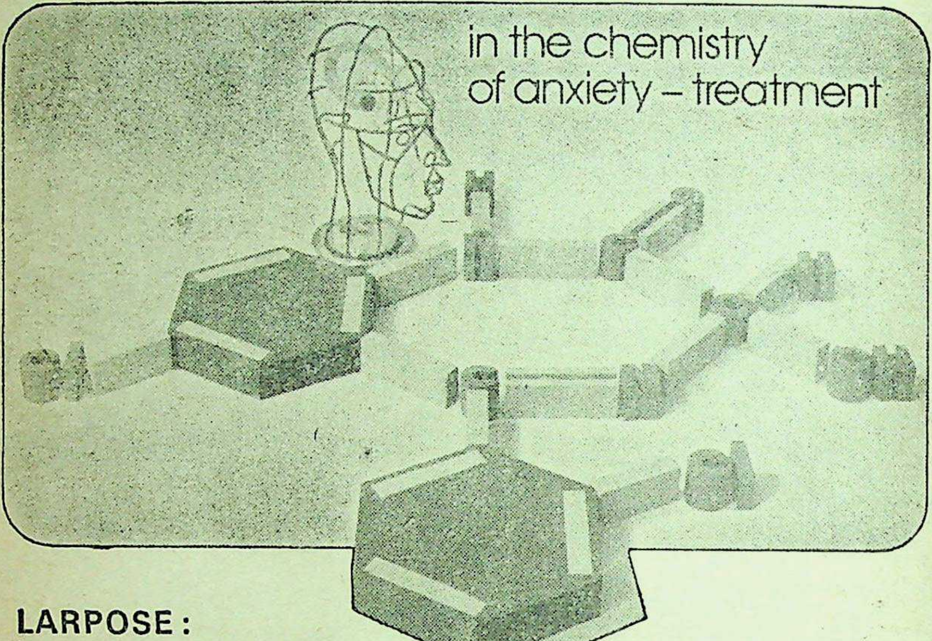

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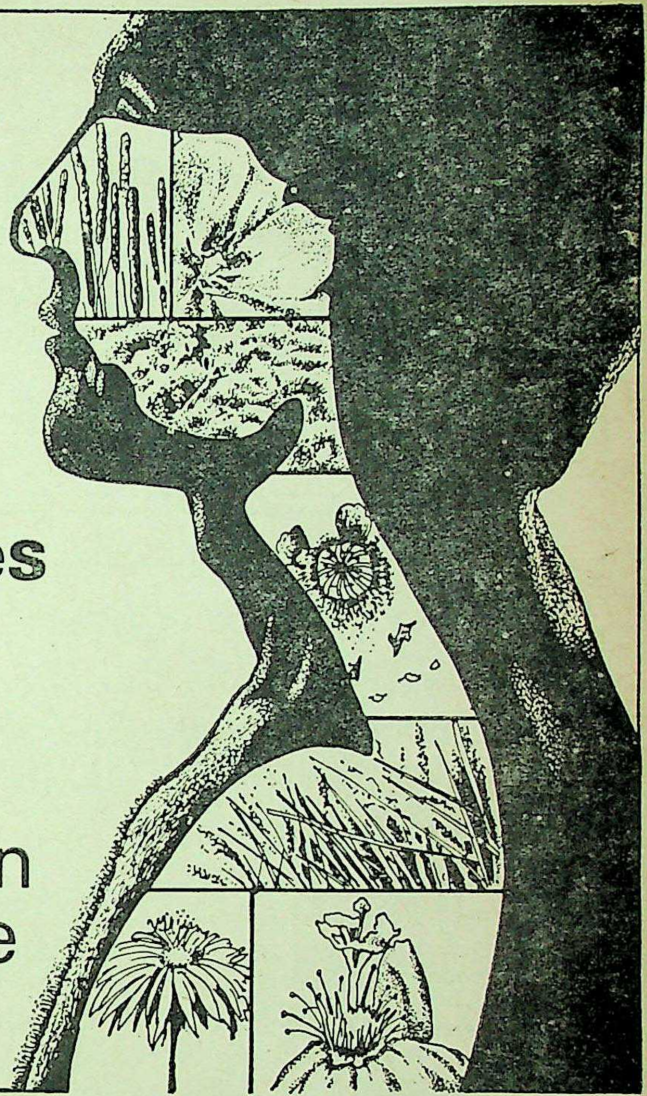

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Vol. 76 AUGUST, 1979 No. 8

Original Articles

RATIONAL CHOICE OF ANTIBIOTICS IN SORE THROAT*

MAJOR R. N. VERMA, M.D. (Path. and Micro.), D.C.P., *Specialist in Pathology*
AND
LT. COL. GURCHARAN SINGH, M.S. (E.N.T.), *Ex. Specialist in E.N.T.,*
[Military Hospital, Bhopal-51]

INTRODUCTION :—Sore throat is a syndrome, characterised by acute inflammation of the tonsillar and faucial areas (acute tonsillitis, acute pharyngitis) with or without exudate which if present may be loose or adherent. It is most commonly due to a viral aetiology (mostly adenoviruses). Richard Wise (1977)[1] has observed that "in less than a quarter of cases of sore throat, bacteriological cause was the group A β—hæmolyticus streptococcus or staphylococcus pyogenes." It is important to distinguish between streptococcal and non-streptococcal infections since the former respond to penicillin therapy which is also effective in preventing septic and non-septic complications, including acute rheumatic fever. Virus infection, on the other hand, does not respond to antibiotics and should not be treated with these drugs unless there is evidence of a secondary bacterial infection. Other causes of sore throat with exudate are diphtheria and Vincent's angina ; an exudate is also frequently present in certain forms of mononucleosis, agranulocytosis and in the leukæmias. An important contributing factor in the latter three conditions is the diminution or inefficiency of the granular white cells which normally act as scavengers in keeping the mucous membranes clean.

Material and methods.—A total of 300 patients with sore throat, were studied. These included both in-door and out-door patients who reported with one or more than one of the symptoms such as pain in throat, headache, fever, cough, bodyache and difficulty in swallowing. All cases showing congestion of the throat with above symptoms were labelled as sore throat and a thorough clinical examination was done. They were sent to the hospital laboratory for total and differential leukocyte count and throat swab examination. Two swabs were taken from each patient by rubbing with the swab gently over the tonsils, the posterior pharyngeal wall and particularly on any area with a purulent exudate. One swab was used for direct smear examination for the causative organisms, including Borrelia vincetii, yeasts, corynebacterium. The other swab was inoculated on 2 blood agar plates, 1 chocolate agar plate and Lœffler's serum in case of children. One of the inoculated blood agar plates was used for anærobic growth. All the plates were examined for the presence of bacterial growth, the size, shape, hæmolysis, pigment production, colour and their colonial characteristics were studied. Further indentification of organisms was done as per specific test described by Cruickshank (1970).[2] The sensitivity of the isolates was tested against sulphonamide 250 μg. per disc, tetracycilne, 30 μg- per disc, benzyl penicillin 10 unit per disc, streptomycin 10 μg. per disc, erythromycin 30 μg. per disc, chloramphenicol 20 μg. per disc, ampicillin 10 μg. per disc, and bactrim 12·5 μg. per disc, by disc diffusion subculture technique (WHO 1961). Inhibition zones of 12 mm. and above were taken as sensitive. Laboratory investigations were completed and cases with high fever, raised white cell count, enlarged neck lymph-nodes and positive culture were treated with injection of procaine-penicillin 1 to 4 lakh unit I.M. daily or oral penicillin, 65 to 260 mgs. 6 hourly accordingly to age for 5 to 7 days. Out of 80 cases, 78 cases improved symptomatically and became afebrile with above treatment.

---

* Specially contributed to the 'ANTISEPTIC'.

A careful clinicopathological correlation was attempted in each case and the observations and results were tabulated. The results were compared and evaluated in the light of earlier reports on the subject.

RESULTS :—Table I. Shows the number of cases both males and females in different age groups and total number of cases in each group.

TABLE I

Showing the number of cases—sex and age group-wise

Sex	Group A (1 to 5 yrs.)			Group B (6 to 15 yrs.)			Group C (16 to 55 yrs.)		
	No. of cases	Pathogens isolated in no. of cases	Percentage	No. of cases	Pathogens isolated in no. of cases	Percentage	No. of cases	Pathogens isolated in no. of cases	Percentage
Male	25	7	28%	42	22	52·4%	105	18	17·1%
Female	18	5	27·7%	30	16	53·3%	80	14	17·5%

Table II shows the symptomatology and findings in percentage of cases on detailed clinical examination.

TABLE II

Showing the clinical findings

Sl. No.	Clinical findings	Precentage of cases
1	Pain in throat	100
2	Headache	70
3	Malaise and bodyache	72
4	Cough	33
5	Low grade fever (irregular)	62
6	High grade fever (constant)	27
7	Difficulty in swallowing/ speech	23
8	History of having consumed antibiotics other than penicillin and sulphonamides	5
9	Mild congestion of the throat	73
10	Marked congestion of the throat	27
11	Adherent membrane	Nil
12	Non adherent membrane	15
13	Enlargement of cervical lymphnodes (Submandibular)	27

Pain and congestion of the throat was present in 100% of the cases and a history of fever was present in 89% of the cases. Twenty-seven percent of the cases presented with high grade fever, enlargement of the neck glands and marked congestion of the throat. Thirty-three percent of the cases with cough were mostly below the age of 15 years. None of the cases presented with an adherent membrane, typical of diphtheria.

It was seen that 22% of the cases with leukocyte count more than 15000/cmm. were mostly below the age of 15 years.

TABLE III

Showing the leukocytosis in percentage of cases

Leukocyte count	Percentage of cases
Leukocyte count between 10,000 to 15,000/cmm.	13
Leukocyte count more than 15,000/cmm.	22

Table IV–Shows the positive culture in percentage of cases and Table V shows the results of bacteriological analysis by different authors.

TABLE IV

Showing the positive culture in percentage of cases

Organism isolated	Percentage of cases
β-haemolytic Streptococci ...	25
α-haemolytic Streptococci ...	85
Staphylococcus aureus ...	7
Neisseria catarrhalis ...	72
Corynebacterium diphtheriae	Nil
Corynebacterium hofmanni ...	22
D. Pneumoniae ...	Nil
Klebsiella species ...	2
Haemophilus species ...	Nil

TABLE V

Bacteriological analysis by different authors (Percentage positive) including present study

Investigators	No. of cases	Strepto pyogenes	Staph. pyogenes	Strepto viridans	D. pneumoniae	H. influence	Staphy albus
Polvogt and Crow (1929)[3] ...	100	91	8	—	—	—	—
Christofferson and Ritchner (1951)[4] ...	50	25	22	—	—	—	—
James, *et al* (19t4)[5] ...	24	15	55·5	—	—	—	—
Farooki (1966)[6] ...	100	15	54	5·5	41	3	19
Ozek *et al* (1967)[7] ...	150	28·6	32	—	—	—	—
Dangschat *et al* (1969)[8] ...	100	32	41	13	7	—	—
Present study (1977—1978) ...	300	25	7	85	Nil	Nil	Nil

Organisms were isolated from each case but they mostly belonged to the commensal flora of the upper respiratory tract Out of the pathogens, streptococcus β–hæmolyticus was isolated in 25% of the cases, staphylococcus aureus in 7% of the cases and klebsiella in 2% of the cases In 7% of the cases two pathogens were isolated as streptococci β–hæmolyticus and staphylococci pyogens or staphylococci β–hæmolyticus and klebsiella ærogens. Pathogens were isolated in only 26.2% percent of the cases.

TABLE VI

Percentage of resistance to different antibotics

Antibiotics used	Total No. of patients showing positive culture=81 No. of patients showing resistance	Percentage of resistance to different antibiotics
Sulphonamides	55	68·7
Tetracycline	12*	14·8
Ledermycin	12*	14·8
Penicillin	5 (£)	6·5
Chloramphenicol	Nil	0
Streptomycin	3	3·7
Ampicillin	Nil	0
Bactrim	Nil	0
Erythromycin	Nil	0

* Cases showing resistance to tetracycline and ledermycin were due to infection by Streptococci β–haemolyticus and klebsiella and this result was of combined antibiotic sensitivity test.

(£) Cases showing the resistance to penicillin were due to mixed infection. They had consumed penicillin, tetracycline and ledermycin in the previous 3 months.

All these cases were put on penicillin therapy either parenterally or orally. Except two cases all cases responded to penicillin therapy. These two cases were due to klebsiella group of organisms and were treated with chloramphenicol. Even the cases which had shown resistance to penicllin had improved with penicillin therapy given parenterally.

Discussions.–Most of the 300 cases studied were in the 16 to 55 years age group, followed by 6 to 15 years age group and 1 to 5 years age group as station population consists of 70% soldiers and recruits and 30% families and children. But Polvogt and Crowe (1929) loc. cit) found the disease to be more prevalent in the first decade. Number of cases showing positive culture are more in 6 to 15 years age group, followed by 1 to 5 years age group and much less in 16 to 55 years age group. It is explained by an association of high carrier rate for hæmolytic streptococci with the presence of tonsils in children and adolescents. Burpee (1937)[9] in an institutional survey recorded a rate of 27·3% inpersons with tonsils and 10·3%, in those whose tonsils had been removed. It was seen that the different age groups having positive culture did not show difference in sex incidence.

These patients reported with various symptoms. Those patients with history of high grade fever were found to have marked congestion the throat, with palpable cervical lymphnodes, high leukocyte count and pathogens were isolated in their throat swabs. No pathogens were isolated in 73·8% of the cases and these were probably due to virus infection, as they presented with irregular low grade fever, headache, malaise and bodyache. In these cases, the congestion of the throat was mild without septic foci. Although it has been customary to associate acute infections with pathogens like streptococci pyogenes and staphylococci pyogenes but advances in virology during the last two decades have thrown doubt on their role as primary pathogens. Richard Wise (1977) (loc. cit.) had pointed out that sore throat, a raised white cell count and enlarged neck nodes point to a bacterial infection. In our study streptococci β–hæmolyticus was isolated in 25% of the cases followed by staphylococci pyogenes in 7% of cases and klebsiella group of organism in 2% of the cases. Similar observations were made by Felty and Hodges (1923),[10] Polvogt and Crowe (1929) (loc. cit.) Rants (1941),[11] Joseph (1941),[12] Pewters (1945),[13] Goldman and Kiesewetter (1946),[14] and Roe (1952) [15] But the works of James (1964) (loc. cit.), Pinto (1966),[16] Farooki (1966) (loc. cit.), and Dangschat (1969) (loc. cit) have shown the commonest pathogen to be staphylococci pyogenes. D, pneumoniæ and H. influenzæ have been inconsistently isolated by the various groups of workers but in our series, it was not isolated. 7% of the cases showed mixed growth of streptococci β–hæmolyticus and staphylococci pyogenes and 2% of the cases showed mixed growth of streptococci β–hæmolyticus and klebsiella ærogenes. Over all pathogens were isolated in only 26·2% of the cases.

Though in general the results of invitro sensitivity tests do not exactly represent *in vivo* sensitivity and sometimes may be misleading (Jawetz, 1963),[17] yet sensitivity tests are essential because of the large range of organisms isolated. An important observation is the marked resistance of the isolates to sulphonamides, thus proving that it has no place in the treatment of sore throat. Cases showing resistance to penicillin, terramycin and ledermycin are probably due to ∝-forms causing the disease. Recently, there is an increasing awareness about the role of bacterial variants or ∝-forms in causing disease. Although the direct pathogenicity of bacterial ∝-forms has yet to be demonstrated, reported association of ∝-phase growth forms of certain bacteria with various disease conditions has become more frequent. All these cases were treated with penicillin therapy even though they showed resistance *in vitro.* Except in two cases, all have shown improvement *in vivo.* These two cases were treated with chloramphenicol. None of the cases was treated with ampicillin erythromycin or bactrim. Tetracyclines should not be used because of their side effect of discoloration of teeth in children and also because a good percentage of streptococci hæmolyticus are resistant to these agents. Other pencillins, such as ampicillin or amoxycillin, have no advantage over penicillin. Bactrim, erythromycin or cephalosporin should not be recommended for these simple infections unless a history of penicillin allergy is present.

Conclusion.—Sore throat is the commonest presentation of the disease to the clinician but only a quarter of cases of sore throats have a bacteriological cause. In 74% of the cases, there is viral ætiology. High fever, a raised white cell count and enlarged neck nodes may point to a bacterial infection and if this is considered to be the case then penicillin is the drug of choice in treatment. It is appreciated that when confronted with a patient who has sore throat it is difficult for the practitioner not to prescribe an antibiotic. The use of oral penicillin at the earliest stage is the compromise.

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FETAL HEART RATE IN THE SECOND STAGE OF LABOUR AND FETAL OUTCOME

Despite general acceptance of the benign nature of early decelerations controversy exists whether in the management of patients in the IInd stage of labour, the question of active intervention often arises. Early decelerations in labour are usually related to head compression and are generally considered as benign. In the present study early decelerations were common and were associated with good fetal conditions at birth. Two newborns were found to be acidotic though clinically well. The first had a heart rate pattern showing persistent bradycardia. Although no conclusions can be drawn from these two cases, it does seem to indicate the importance of close monitoring of patients in the IInd stage of labour. Even in apparently normal labour, complications may arise unexpectedly in the IInd stage. After a normal Ist stage of labour, the occurrence of early deceleration (regardless of its frequency and depth) in a IInd stage lasting no longer than 40 minutes should give a good fetal outcome. Under these circumstances, no active intervention is indicated.—(*South African Medical Journal*, 30th Dec. 1978).

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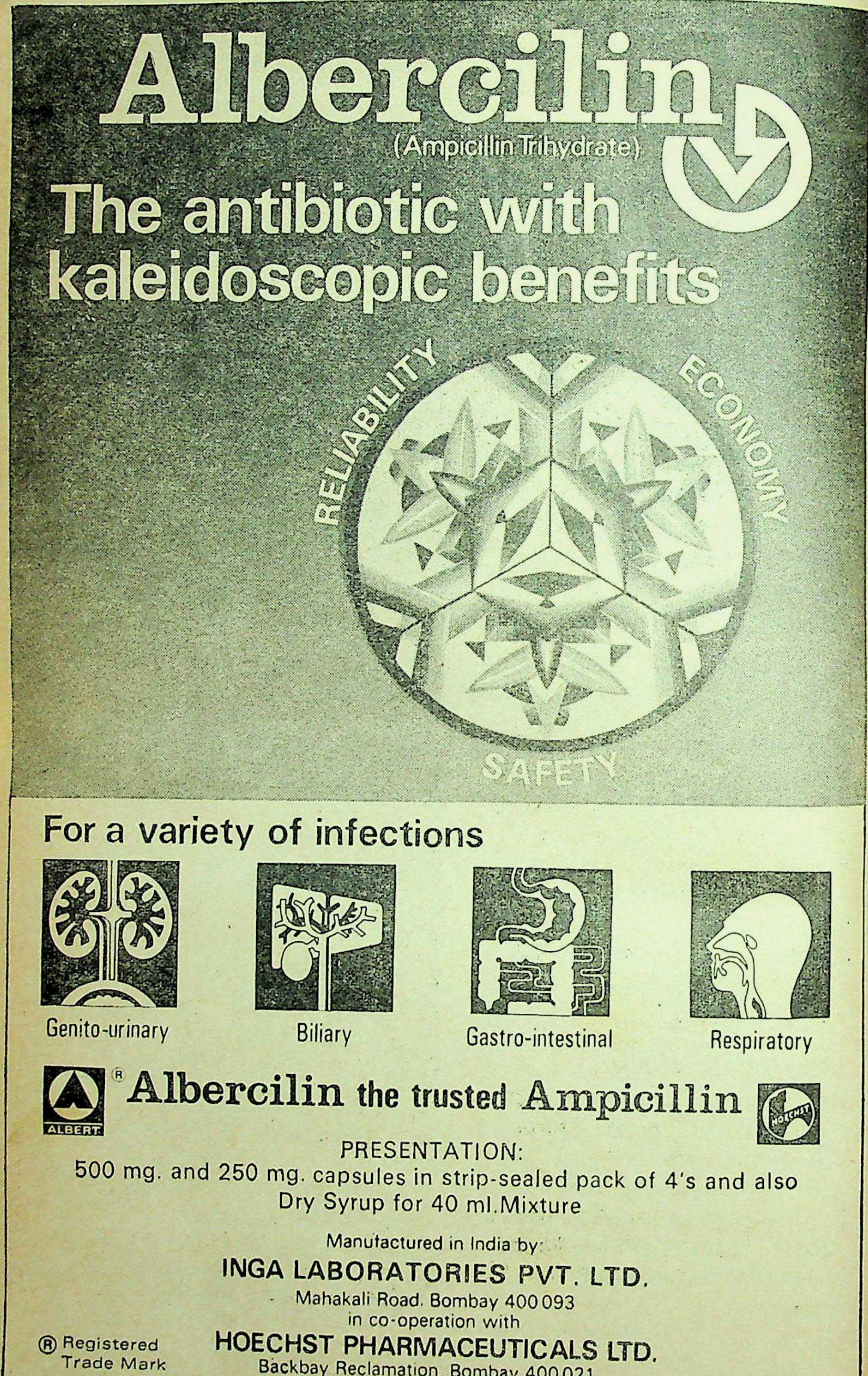

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PROFILE OF TETANUS IN CHILDREN*

(A REVIEW OF 243 CASES)

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INTRODUCTION :—Tetanus is a widely prevalent disease in India. Surveys carried out in some rural and urban areas of India indicate that the mortality due to tetanus is between 5–10 per 1,00,000 population. The incidence of tetanus in children is very much higher than in adults. Shah *et al* reported neonatal tetanus as the third common cause of early neonatal deaths in the rural community. Much work has already been done on neonatal tetanus but the profile of tetanus in children belonging to other age groups has not been studied in detail.

Aim.—The aim of the present study is to find out the incidence and mortality of tetanus in children in relation to various age groups and to find out the probable predisposing factors operating at various age groups.

Material and methods.—243 children admitted in the tetanus ward in the year 1976 were taken up for this study. Children in the age group between 0–10 years were included in this study. The age, sex incidences, mortality and various predisposing factors were analysed.

Discussion.—*Age incidence* :—From the observations it is evident that neonatal tetanus is the major form of tetanus in children accounting about 44·4%. The next common age group is 4–6 years forming 14% of the total incidence.

OBSERVATION :—

TABLE I

Showing the age incidence

Age	Number of cases	Percentage
0–1 Month	108	44·4%
1 Month–1 year	13	5·3%
1–2 years	15	6·1%
2–4 years	32	13·1%
4–6 years	34	14%
6–8 years	16	6·5%
8–10 years	25	10·6%

TABLE II

Showing the sex incidence

Age group	Male	Female
0—1 month ...	45	63
1 month–1 year ...	10	10
1—2 years ...	11	4
2—4 years ...	21	10
4—6 years ...	25	10
6—8 years ...	10	6
8–10 years ...	12	6

Sex incidence :—The incidence of neonatal tetanus is high in females. Sex incidence is equal in the age group of 1 month to 1 year. Thereafter males predominate.

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*Specially contributed to the 'ANTISEPTIC'.

Mortality :—The highest mortality (75·5) was noted in the neonatal age group. In neonatal tetanus, the highest mortality was noted in the first week (81·5%) thereafter mortality rate gradually decreases. Mortality rate was also high in the 4—8 yrs. age group.

Table III

Showing the mortality

Age group	Number of deaths	Percentage
0—1 month ...	82	75·5
1 month—1 year ...	6	46·1
1—2 years ...	4	23·3
2—4 years ...	12	37 5
4—6 years ...	12	35·2
6—8 years ...	8	50
8—10 years ...	10	40

Table IV

Showing the probable predisposing factors

Age group	Umbilical sepsis	CSOM	Injury	Miscellaneous	Unknown
0—1 month ...	78	—	—	5	25
1 month—1 year ...	—	5	1	2	9
1—2 years ...	—	6	4	1	4
2—4 years ...	—	15	10	—	7
4—6 years ...	—	16	7	3	6
6—8 years ...	—	4	7	2	3
8—10 years ...	—	7	12	3	3

Probable predisposing factors :—A detailed analysis regarding the predisposing factors has revealed a number of interesting features :—(*a*) Umbilical sepsis forms the major predisposing cause in the neonatal age group. Other causes include infected vaccinated wound, etc., and in some no exact predisposing factor could be made out. (*b*) In the preschool age group, chronic suppurative otitis media forms a major predisposing factor. (*c*) In the older children trauma (including thorn prick, nail prick, lacerated wound, etc.) forms a major cause.

Table V

Showing the incidence and mortality

Age	Number of		Mortality rate
	Cases	Deaths	
0—1 week ...	64	52	81·5%
1—2 weeks ...	32	24	75%
2—3 weeks ...	6	4	66·6%
3—4 weeks ...	4	2	50%

Conclusion.—*The present study clearly indicates* :—

(1) The problem of highest incidence and mortality in the neonatal age group.

(2) Diversity of probable predisposing factors in different age groups. This is important in that it stresses the need for a particular preventive measure to be adopted in a particular age group (For example CSOM forms a major predisposing factor in the preschool age group. So a routine administration of tetanus toxoid to every case of CSOM may reduce the incidence of tetanus in these children). Of course a prospective study in this regard is required.

Thus the present study has given some idea about the magnitude of the problem of tetanus in children at various age groups with due consideration of possible predisposing factors operating at various age groups in order to evaluate a proper preventive measure.

Acknowledgement.—We thank the Dean, Dr. (Mrs) S. Parvathi Devi, Government Erskine Hospital, Madurai for having permitted us to use the Hospital records for our study.

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CHENIC ACID FOR GALL STONES

Chenic (or Chenodeoxycholic) acid has become available for treating cholesterol gall stones medically. First isolated from goosebile (Greek-chen-goose) chenic acid makes upto about 40% of the bile acids present in human bile. During successful treatment the proportion of chenic acid in bile rises to over 70%. This reduces cholesterol secretion into bile probably by inhibiting cholesterol synthesis in the liver. There are certain conditions for treatment with this acid. (1) Its use must be limited to patients likely to benefit by it. (2) It can be effective only for cholesterol gall stones and it can dissolve these only if unsaturated bile can enter the gall bladder. These two requirements can be predicted from an oral cholecystogram. Treatment can never replace cholecystectomy in most patients. A single large gall stone is a poor candidate for treatment with chenic acid. It will dissolve much more slowly than several small stones; complete dissolution usually occurs with small stones (less than 5 mm. diameter) within 6 to 12 months, while most stones over 1 cm. diameter require more than 2 years. Some patients do not respond to the recommended dose of 15 mg/kg/day given at meal times because their bile remain saturated with cholesterol. Obese patients require 20 mg/kg/day. The effect of chenic acid on choles terol saturation of fasting gall bladder bile is enhanced if the whole dose is given at bed-time, and by the addition of a low cholesterol diet. An important problem is finding a method of preventing the recurrence of gall stones once dissolution has been achieved. Patients may be advised to take bran which will reduce the cholesterol saturation of gall-bladder bile but not sufficiently to render it unsaturated with cholesterol.—(*B. M. Journal*, 23rd September, 1978).

Question.—Are antihistamines of value in treating catarrhal deafness.

Answer.—Antihistamines have some value in treating catarrhal deafness as they decrease secretions that exacerbate the condition. An antihistamine combined with a decongestant such as xylometazoline hydrochloride (Otrivine, Antistin) nasal spray would probably be of greater value than antihistamines given orally and cause less sedation. Such a preparation should not be used for prolonged periods, however, as rebound congestion can occur. One of the more sedative antihistamines such as promethazine hydrochloride (phenergan) might help at bed time for the relief of nasal congestion.—(*B.M.J.*, 5th Aug. 1978).

Q. What may be the cause of painful breasts and what is the treatment ?

A. The degree of pain in the breasts is not necessarily related to the apparent degree of clinically apparent dysplasia, and occasionally the symptom may considerably disrupt the patient's life. Please *et al* described six clinical syndromes of mastalgia found in 232 patients in whom breast pain was the presenting feature (after excluding other pathology). The commonest type is cyclical pronounced mastalgia which is thought to be hormonally based (the pain is more consistently in the same place in these patients). They also describe duct ectasia, Tietze's syndrome, trauma, sclerosing adenosis, and cancer. They found only 7% of patients with pain of unknown ætiology. It is important to take a history, especially noting the relation of pain to menstruation, indicating a likely hormonal dependence. Factors exacerbating or relieving the pain should be noted and also the personality type of the patient. Although Præce *et al* considered that most patients had a physiological or pathological basis for their pain, those few patients who failed to respond to any treatment had, as a group, an appreciably higher score for anxiety traits and depression.

Complete examination of the breasts is mandatory, and the findings may help to alleviate the patient's symptoms and concern. Reassurance is important. She should realise her pain is accepted by the doctor, and required investigation and treatment. Thermography may be indicated at varying intervals during the menstrual cycle. Mammography is necessary, particularly in the post-menopausal group of patients if a nodule or mass is palpable or if there is any doubt about the cause of the pain. Xero radiography minimises the radiation hazard. If cancer is thought to have been excluded the patient should be told and invited to attend for subsequent follow-up examinations. Most painful breasts will probably be relieved spontaneously within two years.

Multitudinous treatments have been advocated. In the hormonally dependent type of mastalgia or breast pain the patient should probably be referred for hormonal assay and treatment to a breast pain (mastalgia) clinic or an endocrine clinic. Haphazard administration of hormones is now generally accepted as potentially hazardous; progestational agents or oestrogen and progesterone in combination have been used. Androgens and synthetic androgens have been reported as giving nearly 90% good results, but these drugs and danazol, an impeded synthetic androgen, cause amenorrhoea as a side effect. Vitamin A may antagonise oestrogen formation. Iodine containing agents and potassium iodide may decrease the oestrogen concentrations and raise the progesterone concentration. Diuretics have been widely used and are said to reduce oedema, inflammation, and vascular engorgement. There is no definite evidence of the pill affecting pain—but oestrogen and progesterone are usually balanced in the pill. Sometimes changing to another type or stopping the administration will relieve breast pain. A good support elasticated brassiere and simple analgestics will relieve pain in some patients. The bra may help if worn at night as well as during the day. There should be no wire structure in the cups of the bra. If pain is both persistent and localised to one specific area in the breast excision of the localised area followed by histological examination may be indicated and may also relieve the pain. Pain may be the first symptom of an underlying cancer as it is a presenting symptom in 8—10% of operable breast cancers.—(*B. M. J.*, 21st October, 1979).

LIVER FUNCTION STUDIES IN AMOEBIC LIVER ABSCESS*

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INTRODUCTION:—Many experts who studied liver functions in amoebic liver abscess are of the opinion that the liver functions are altered in a small percentage of cases. Sheila Sherlock writes, "Hepatic functions are usually normal; Serum Alkaline Phosphatase is sometimes raised. "In our series we found that there is significant alteration in the liver function in amoebic liver abscess. A prospective study of fifty-five patients admitted in the hospital with clinical evidence of amoebic liver abscess was carried out with the available investigatory procedures and methods.

Material and methods:—Patients admitted in the Medical as well as Surgical wards belonging to either sex with a clinical history of amoebic liver abscess were subjected to the routine investigations to establish the diagnosis. Needle aspiration was attempted in all the patients to confirm the diagnosis by studying the nature of the aspirate and by demonstrating the trophozoites in the aspirate. In all patients we could aspirate considerable quantity of anchovy sauce pus. Only in a few patients were we able to demonstrate the trophozoites in the aspirate (13%). The liver function tests were carried out by the available bio-chemical methods before starting specific therapy.

CLINICAL OBSERVATION:—Of these 55 patients, 5 were females and 2 were children below 13 years. The rest were males in the age group of 20–55 yrs. The majority of patients were in the fourth and fifth decades of life.

TABLE I

Showing the symptomatology

		No. of patients	Percentage
Pain—right hypochondrium	...	49	81
Fever	...	39	73
Vomiting	...	11	20
Jaundice	...	11	20
Loss of apetitude	...	16	29
Cough	...	5	11
Dysentery	...	11	20

Out of these 55 patients 10 patients had abscess in the left lobe of the liver and the rest in the usual site. Nine patients, developed complications due to rupture of the liver abscess into the neighbourhood. In 6 cases the abscess ruptured into the right lower lobe of the lungs. In 2 patients it ruptured into the peritoneal cavity and in 1 patient into pericardial cavity.

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*Specially contributed to the 'ANTISEPTIC'.

TABLE II

Showing the results of biochemical investigation

	No. of patients	Percentage
S.G.O.T ↑ ...	35	63·6
S G.P.T. ↑ ...	40	72·7
Serus Alk. Phosphatase ↑ ...	46	83·6
Reversal of albumin globulin ratio ...	53	96·3
Changes in serum electrophoretic pattern ...	46	83·6
Serum bilirubin ↑ ...	14	25·4
Thymol turbidity ↑ ...	14	25·4
Icteric index ↑ ...	30	54·5
Vanden bergh ...	28	40·4

Summary.—In this study out of 55 cases of amœbic liver abscess, the majority of patients showed altered liver functions. Serum alkaline phosphatase was elevated in a high percentage of cases (83·6%). The SGPT and SGOT were also significantly raised. The reversal of A— G ratio was present in a large number of cases (96·3%). The serum bilirubin was elevated in a small number of patients. The other liver functions were also significantly altered. These changes could be either due to the damage due to amœbic hepatitis prior to the abscess or due to the large sized abscess itself which was noticed in many patients. The changes are both due to necrotic and obstructive pathology.

Adams, E. B. and Macleod, I. N, (1977) reported about 32% of patients showing altered liver functions. Ramachandran, S. Goonatillake, H. D., Induruwa, A. A. C., (1976) reported about 42% of patients with altered liver functions. In our series we noticed a high percentage of patients showing altered liver functions in amœbic liver abscess. But our study included only a small number (*i.e.*, 55 cases) of patients. The high percentage emphasises the necessity for early diagnosis and prompt treatment of hepatic amœbiasis either in the hepatitis stage or in the abscess stage.

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NON-SPECIFIC VAGINITIS

Non-specific vaginitis, *i.e.*, in which no obvious infecting organism such as trichomonas or candida can be found, is rare and is resistant to treatment. A recent study suggests that Haemophilus vaginalis is after all the culprit, and that the best treatment is metronidazole (Flagyl) 500 mg. orally twice daily for 7 days. Improvement was rare with local sulphonamide cream, oral doxycycline or even oral ampicillin, but 80 out of 81 patients responded to Flagyl. Since they isolated H. Vaginalis also from the urethra of 19 out of 33 sexually active male patients without urethritis, the infection is probably sexually transmissible, and it may be wise (*a*) to treat woman's sexual partner (*b*) to treat a woman with multiple partners with repeated courses of metronidazole bearing in mind possible drug toxicity.—(*South African Medical Journal*, 28th Oct. 1978).

EPONTOL AS A SHORT-ACTING ANÆSTHETIC*

(A Preliminary Assessment)

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THE surgeon, anæsthetist, pharmaceutical companies, not to speak of the patient himself are always on the lookout for an ideal anæsthetic agent.

The qualities of the ideal anæsthetic are too well known to require mention.

It has been claimed for Epontol, a recently introduced (in India) short term anæsthetic agent (M/s. Bayer) that it has the following eminently desirable qualities, *viz.*

1. The patient "goes under" rapidly and pleasantly without excitation.
2. It achieves a plane of anæsthesia sufficiently deep for various minor but painful surgical procedures.
3. There is a smooth and rapid recovery from anæsthesia in a span of 5—6 minutes after induction, with no "hangover" effects, enabling out-patients to be discharged early, an important consideration in a busy casualty department.
4. As the patient breathes on his own while under anæsthesia, no respiratory support is needed.
5. Retching and vomiting are rare.

Material and methods.—Fifteen patients form the substance for this preliminary assessment. Even though the number is small, we could form some definite opinions about this drug.

There were 5 children and 10 adults. Ages ranged from 8 years to 50 years. 11 were males and 4 were females. The following procedures were completed under epontol anæsthesia;

(*a*)	Reduction of fractures and dislocations	....	2 cases
(*b*)	Incision and drainage of abscesses	...	7 cases
(*c*)	Laying open of superficial sinuses	....	2 cases
(*d*)	Dilatation of urethra	....	3 cases
(*e*)	Curettage and biopsy	...	1 case

Results were recorded as satisfactory, partially satisfactory or unsatisfactory.

When the patient was quiet during the procedure and behaved as though he felt no pain, the result was considered satisfactory. Where the patient behaved as if he had felt pain, this being shown by tensing of muscles, restlessness and struggling, groaning, etc., the result was recorded as not satisfactory and depending on the degree of the above manifestations were classed as partially satisfactory or unsatisfactory.

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*Specially contributed to the 'ANTISEPTIC'.

Results :—By this criteria, 6 cases were classed as satisfactory, 4 as partially so and 5 as unsatisfactory. On going through our case notes, we feel that the four classed as "partially satisfactory, would with less strict criteria be classed as satisfactory. Thus 10 out of 15 cases (66%) could be accepted as satisfactory to a greater or lesser extent.

How Epontol is to be used :—Each ampoule of Epontol contains 500mg. Propanidid. As the solution is somewhat viscous, the injection should be given through a wide-bore needle. It is administered by the intravenous route only. Dosage as advised by the manufacturer is as follows :

(*a*)	Children	...	7—10 mg./kg. body weight.
(*b*)	Adults (16—60 years)		5–7 mg./kg. body weight (Max. 10 mg.)
(*c*)	Over 60 years and in poor risk cases	...	3—4 mg./kg. body weight.

In children the 5% epontol solution should be diluted with physiological saline to 2·5%. This minimizes local venous irritation and also by making the solution less viscous allows the smaller veins and finer needles to be used. The time taken for injection should be about 30 seconds, but not less. The rate should be increased to 60 seconds for poor-risk cases.

A few seconds from the commencement of the injection the patient "goes under". After about 10–20 seconds there is a brief period of hyperventilation, followed by a phase of reduced respiration and occasionally apnœa which may last for up to 30 seconds. With the commencement, or latest, at the end of hyperventilation, the necessary depth of anæsthesia is reached and the patient can be operated upon. After an average period of 3–4 minutes the patient comes round quickly and fully. Since the period of anæsthesia is very short, the surgeon must be ready to operate the moment the patient "goes under".

Precautions and contraindications.—When epontol is used, the usual premedication should be given If there is an allergic background (asthma, eczema, etc.) an anti–histaminic should be used for premedication, as epontol causes release of histamine (so do, many other anæsthetics). There are no absolute contraindications for epontol. To counter-act any anæsthetic complications (rare), suction apparatus, respirator, life saving drugs (corticosteroids) etc. should be at hand. It should be noted that these precautions are also taken with all other anæsthetic drugs.

Discussion.—In this preliminary assessment we have established that some of the claims made for epontol are justified. Thus the patients "go under" rapidly, smoothly and without the preliminary excitation and "fuss" seen for example with open ether. Recovery is rapid, smooth and without any 'hangover'. Patients are quite alert after they come out of the anæsthetic and can be sent home straight away. No untoward side-effects were noted. The drug appears to be quite safe. However a larger trial is required to confirm this.

Regarding the depth of anæsthesia, we found the results satisfactory in 10 out of 15 patients but frankly unsatisfactory in 5 patients.

We have studied these 5 cases carefully and can find no apparent cause for the unsatisfactory anæsthesia. In one patient the dose used was slightly on the low side, but the other four had doses slightly in excess ; so the dosage may not be the factor.

Summary and conclusions.—A new short term anaesthetic "epontol" was tried in 15 patients undergoing various minor surgical procedures. The results were considered sufficiently promising for the drug to be used for an extended trial. If the initial promise is borne out, the drug could be a worth-while addition to the anaesthetist's armamentarium.

Acknowledgements.—We are indebted to Dr. A. M. S. Gowda for permission to carry out this trial. Thanks are due to M/s. Bayer (I) Ltd., for a generous supply of the drug. Secretarial assistance was provided by Sri S. P. Panchatcharam.

FLATULENCE AND ERUCTATIONS

The presence of gas in the gastrointestinal tract is normal, and it comes from two sources, swallowed air, and colonic gas production during digestion. Not everyone complaining of flatulence is actually producing excess gas ; some simply have a low threshold of tolerence for colonic distension. The only problem is to recognise a malabsorption syndrome. Too much gas may be due to dietary factors, slow transit in the colon, or nervous factors. These patients should avoid anything leading to excess air-swallowing, no chewing gum or sweets and must stop bolting their food. Should avoid food items which induce fermentation, such as vegetables with a hard cellulose covering digested only in the colon, (peas, beans, lentils) or onions, cabbage, or bananas. Fibre enriched diet can help, but only after enhancement of flatulence for a time. Eructations may become automatic, reflex and irrepressible. Patient must eat slowly, relax and take a walk after meals. No business talk at table, no irritant foods no tobacco, no carbonated beverages, no iced drinks and of course no chewing gums. Better a change in life style than a prolonged use of sedatives or anticolinergics.—(*South African Medical Journal*, 28th Oct. 1978).

LOSS OF WATER IN THE HUMAN SYSTEM DURING FLIGHTS

Many air travellers suffering from the debilitating symptoms of jet air travel overlook a simple, safe, and cheap aid-water. Dr. Nathan Smith, Prof. of Pædiatrics and Sports medicine, at the University of Washington, says 'sitting in a jet liner is a little like sitting in the Sahara desert. Not only is the air in planes very dry, but the rapid circulation of air in plane ventilation causes a substantial loss of body water". It is estimated by Dr. Smith that on an average we may need six tumblers of water for every five airborne hours.—(COURTESY : *Reader's Digest*, Feb. 1979).

ANKLE: ARM SYSTOLIC B/P RATIO IN ARTERIAL DISEASE

One-hundred patients who had arteriosclerosis obliterans with arterial occlusive disease involving one or more of the trunk or limbs, arteries, were selected. Patients were tested after resting in the supine position for 15 minutes. The pneumatic cuff was then inflated approximately 20 mm. Hg over the level of the arm systolic pressure. The pressure in the cuff was then released slowly until the arterial flow signal detected by the Doppler instrument resumed. This was the systolic pressure in the posterior tibial artery at the card of the ankle. The identical site was used in both legs. The arm systolic pressure was also determined with the Doppler flow probe placed over the brachial artery in the antecubital fossa. Patient was exercised on a calibrated treadmill at a speed of 24 m. per minute. The ankle/arm systolic B-P was found to provide a simple, accurate, non-invasive mean of assessing the severity of the arterial disease. The more diffuse the arterial occlusive process, the lower the ankle pressure and hence the greater the ankle: arm pressure difference. Pressure changes after the exercise tolerance test give a good indication of the hemodynamic status in the limb. Ankle pressure readings at intervals after the test, as well as the time required for a return to the resting level, indicate the severity of the disease. With an accurate assessment of the degree of arterial insufficiency and condition of the collateral circulation, the physician can better plan treatment and interpret the hemodynamics of the arterial lesion.—(*New York State Journal of Medicine*, June, 1978).

ABACTERIAL CYSTITIS

Question.—A 70 year old women has persistent haemorrhagic cystitis. Cystoscopy showed marked generalized inflammation of the bladder mucosa. Repeated biopsy specimens were negative for neoplasm. Urine cultures including those for tuberculosis, were negative. Treatment with a wide variety of antimicrobials has not helped, and it is my impression that she has abacterial cystitis. Since intravenous arsenicals are no longer available for treatment of this condition, can you recommend alternative therapy?

Answer.—As an alternative to intravenous arsenical treatment, such as neoarsphenamine and oxophenarsine hydrochloride, Wettlawfer in 1976 reported his experience with oxychlorosene sodium (Clorpactin WCS-90) in the treatment of verified abacterial cystitis in two patients. Two bladder instillations of 0·1% solution each, seven days apart, and a third instillation 30 days later, in the second patient, were sufficient to produce satisfactory results in both cases.

I have used this treatment recently in two women (aged 27 and 31 years) with abacterial cystitis after several intravesical irrigations with a formaldehyde solution (1% to 4% maximum). If this treatment is considered for your patient, there must be no evidence of vesicoureteral reflux on cystography. I am aware that formaldehyde therapy is usually recommended for other specific causes of hæmorrhagic cystitis. Finally abacterial cystitis, interstitial cystitis, and other types of hæmorrhagic cystopathies often conceal in situ bladder carcinoma and this eventuality might be considered in a 70-year-old women.—(*J.A.M.A.*, 3rd Nov. 1978).

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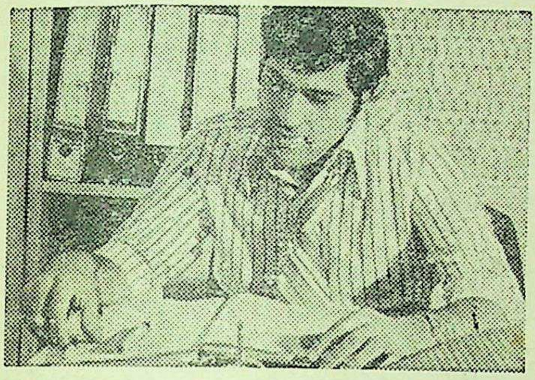

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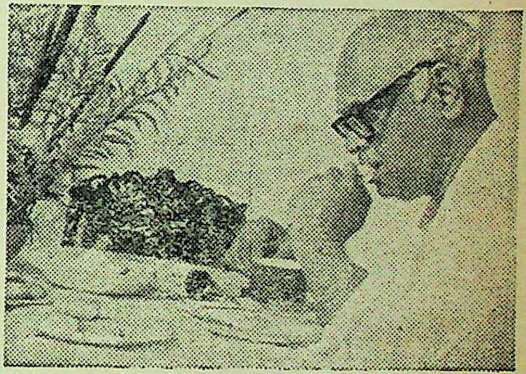

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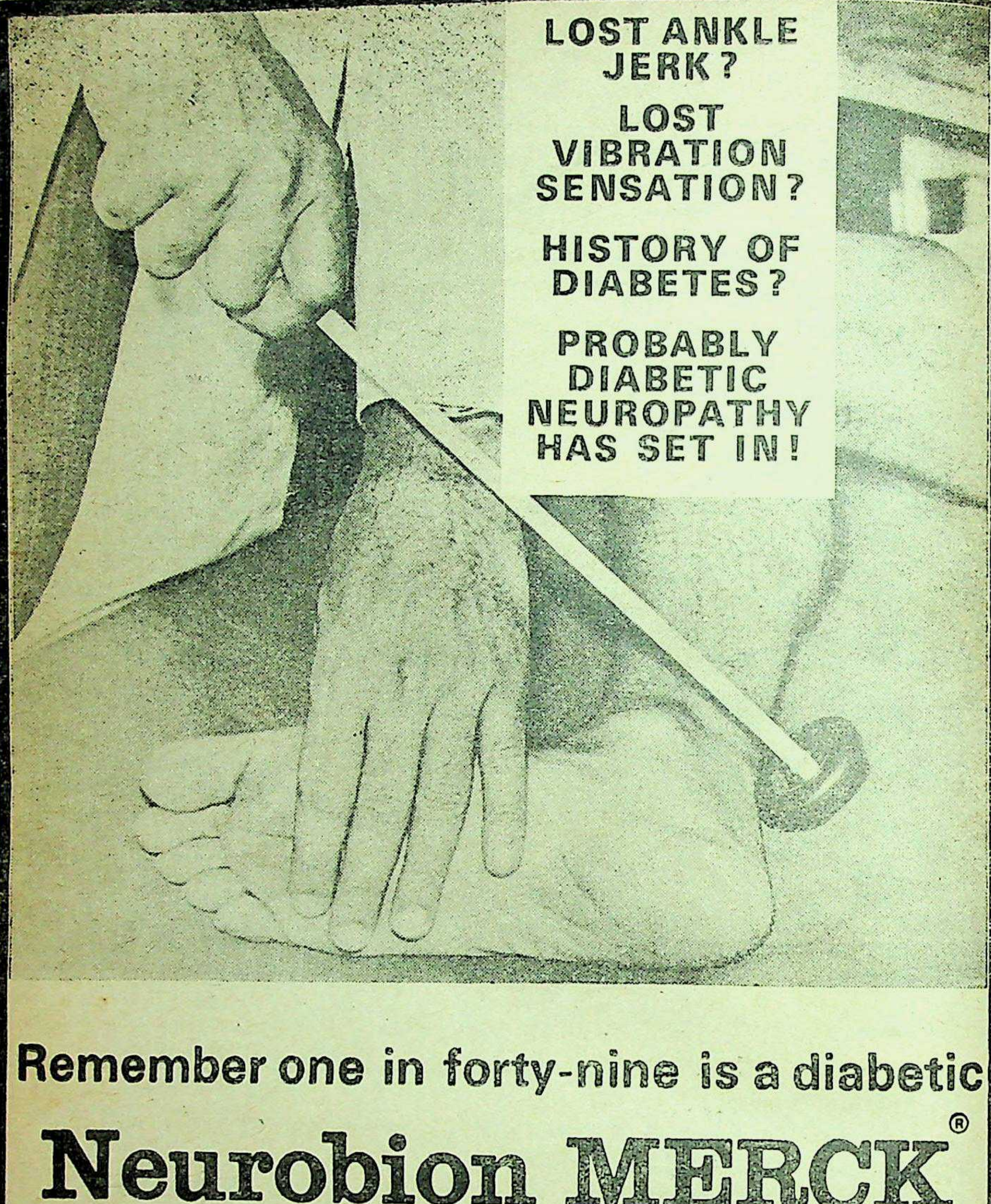
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PROPRANOLOL IN THYROTOXICOSIS*

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INTRODUCTION:—Thyrotoxicosis is a hyper metabolic state with varied manifestations in cardiovascular, central nervous, and other systems For many years, physicians have noted that these manifestations resemble effects of increased activity of sympathetic nervous system, although a precise inter relationship between the two could not be established.

Further investigations have shown that there is (*i*) increased intrinsic tissue activity and (*ii*) increased adrenergic activity (Turner 1974). Augmented adrenergic activity may be due to hypersensitivity to catecholamines. (Turner 1974, Levey 1975)

Whatever the exact mechanism, clinical impression and experimental evidence resulted in the concept that β-adrenergic stimulation produces most of the classical signs and symptoms of thyrotoxicosis and that this could be antagonised by β-blockers like propranolol. This knowledge has formed the basis for the use of propranolol in the pre-operative treatment of thyrotoxicosis (Lee, Mcdevitt). etc.

Methods and material.—Ten cases with classical clinical and laboratory findings of thyrotoxicosis treated at the Bhilai Steel Plant Main Hospital during the last 3 years form the basis of this study.

The details are as shown below. There were 7 females and 3 males, and their ages varied between 26 and 40 years.

Besides routine investigations like Hb%, T.L.C., D.L.C., B.T., C.T., urine analysis, B.M.R., P.B.I., Serum cholestrol, X-ray chest and E.C.G., were also done.

In 5 patients the drug was used as the sole agent for preoperative preparation of the patients who had no previous specific therapy. The patients were admitted 8 days before operation and were put on oral propranolol 160 mg. in 6 hourly doses; 3 of the patients required a higher dosage upto 320 mg. daily. The response was judged by a fall in pulse rate to between 80 and 90 per minute and symptomatic improvement. The last dose was given 1 hour before operation on the 7th day and the drug was reinstituted 6 hours after operation.

Four patients were being treated with conventional antithyroid drugs (Neomercazole + Iodine). But showed inadequate control of toxicity. They were given propranolol orally in a dosage of 160 to 240 mg. in 6 hourly divided doses. All the patients showed marked improvement in symptoms by the 4th or 5th day.

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*Specially contributed to the 'ANTISEPTIC'.

The patients underwent subtotal thyroidectomy under general anæthesia with Fluothane. Atropine was not used pre-operatively.

Following the operation, frequent observation of the patient's vital signs and subjective symptoms were recorded. There were no untoward reactions during the operation. Post-operatively the drug was given in tapering doses till the 6th post-operative day, after which the drug was excluded and patients were discharged on the 8th to 10th day, after operation.

One patient who was prepared with anti-thyroid drugs and iodine, developed thyroid crisis after the operation. Inderal, 2 mg. I.V. repeated after 4 hours brought the situation under control promptly. The drug was continued orally 40 mg. daily for 3 days.

Results :—All the patients showed marked symptomatic improvement and a fall in pulse rate to between 80 and 90 which was considered to be an adequate response. There was no change in the size of the gland or exophthalmos.

No difficulties were encountered during the operation. The gland was not excessively friable nor was there excessive blood loss. There was no evidence of injury to nerve or parathyroids post-operatively. There were no anæsthetic problems. E. C. G. monitoring did not show any abnormality.

Discussions.—Till recently conventional medications like *thioamides,* iodine, R-Iodine^{131} etc. were the agents available for control of hyper-thyroidism. Their limitations like toxic reactions, variable response and poor control are well known. They require 6 to 8 weeks for pre-operative preparations (Mcdevitt, 1976).

Reserpine and guanethedine were found to improve some of the manifestations of this disorder by depleting the tissue concentration of catecholamines. (Canary *et al,* 1957—Levey, 1975). Various undesirable side effects and slow action has limited their use.

The mechanism by which β–adrenegic blockers favourably modify the manifestations of excess thyroid hormone is not known. They are found to competitively inhibit the interaction of catecholamines with available β–receptor sites in target tissues including the heart (Levey, 1975).

Response to propranolol is variable as far as various signs and symptoms are concerned.

The ones which are improved are tachycardia, nervousness anxiety, tremors, sweating, etc although the heart rate may not drop to normal in a few cases which is due to action of hormones on the heart, independent of catecholamine stimulation.

Propranolol does not reduce the size of the gland nor does it interfere with the thyroid function test as the level of hormone is unaltered- (Lee *et al,* 1975).

Exopthalmos persists and oxygen comsumption is unchanged (Levey, Lee, *et al*).

Action dosage and indications:—Propranolol acts quickly when given orally and the action lasts only for about 6 hours hence the dose has to be repeated six hourly, for effective blockade. Intravenously it is effective within a few minutes. The drug as to be given post-operatively as the serum level of thyroxine remains high after operation for 4—5 days. (Levey 1975).

Situations where β-blockers are of use could be many. It could be used as a sole agent for rapid pre-operative preparation of patients who are in a hurry to get operated. This can be done in 4—7 days time as against 6—8 weeks required by conventional drugs. There may be patients who do not respond to or tolerate anti-thyroid drugs and in such cases naturally propranolol remains the drug of choice (Shanks, 1969, *et al*, Lee, 1973 *et al*).

One may like to use a β-blocker in conjunction with anti-thyroid drugs or radioactive iodine to control the toxicity till such time as these agents start acting.

Undoubtedly it is a boon in treating a "thyroid storm," an emergency which was a terror in earlier days. Some of my senior colleagues might recollect the tachycardia they had when everything under the sun was being tried to bring the situation under control. I. V. propranolol is effective within minutes and is a reliable tool and hence we can face such complications now with confidence. (Parsons, V. Jewitt, D. 1967).

It has been tried as a sole agent in the long term management of thyrotoxicosis in place of antithyroid drugs but most of the workers are not impressed by its use. (Mclarty, 1973)

There are cases where propranolol should not be used, *e.g.*, patients who have heart block, marked bradycardia, heart failure, etc. It may be hazardous in patients with a history of broncho-spasm, asthma and chronic lung disease. It should be avoided in patients on psychotropic drugs and oral anti-diabetic therapy.

Summary and conclusions.—Many manifestations of hyper-thyroidism are secondary to increased adrenergic activity. This knowledge has formed a rational basis for use of β-adrenergic blocking agents to alleviate the signs and symptoms of thyrotoxicosis.

It allows the thyrotoxic patients to be prepared for operation more promptly than has been possible with conventional methods of treatment. It is the drug of choice for patients intolerant to or unresponsive to antithyroid agents and is a desirable therapy for the prevention and treatment of thyroid crisis.

This study deals with the use of propranolol in 10 cases of hyper-thyroidism. Encouraging results have prompted us to present this series. Indications, dosage regimen, limitations and contra-indications therapy have been discussed.

Acknowledgement.—We are grateful to the Chief Medical Officer, Bhilai Steel Plant, Main Hospital, for permission to use the hospital records and to publish this article.

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CLINICAL EXPERIENCE WITH CROTAMITON CREAM AND LOTION IN THE TREATMENT OF SCABIES IN CHILDREN

Fifty infants and small children less than 2 years with scabies were treated with 3 or 5 applications of either 10% crotamiton cream or lotion on consecutive days. The applications of crotamiton (the active ingredient of Eurax cream and lotion (Geigy) cream or lotion to the whole body from the chin down to toes did not lead to any topical or systemic adverse effects. 5 applications of crotamiton cream are necessary for adequate treatment of scabies. The overall, results with the cream were far better than those of the lotion. The cream applications gave optimum results of a cure rate of 69% and a benefit rate of 85%. It is therefore recommended as an ideal treatment for scabies as it is the only scabicide available which possesses not only antipruritic but also antibacterial properties. Crotamiton offers the following advantages over other scabicidal remedies.

(1) It is an effective non-specific antipruritic agent and the intense itching associated with scabies readily responds.

(2) Due to the antibacterial action on streptococci and staphylococci, it effectively counteracts superficial bacterial pyogenic skin infections especially in children.

(3) Is pleasant to use, because unlike other sulphur ointments, it is non staining and is neither messy, or odoriferous.

(4) Well tolerated, no risk of systemic toxicity. No adverse effects due to transcutaneous resorption following topical application.—(*British Journal of Clinical Practice*, August 1978).

CEREBRAL INFARCTION IN YOUNG ADULTS

The etiologic and prognostic features which characterize cerebrovascular disease in the later decades of life are not applicable in younger patients. The records of 58 patients who had suffered cerebral infarction between the ages of 15 and 40 years were reviewed. Fifty-five percent had an identifiable etiology for their cerebral infarction, with nearly half of these suffering from embolic infarction of cardiac origin. In 45% no clear etiology could be established but hypertension was prevalent in those patients between 31 and 40 years of age. Follow-up data were obtained on 68% of the hospital survivors, nearly three-fourths had completely recovered or had improved.—(*J.A.M.A.*, 30th June, 1978).

NEW POSSIBLE USES FOR AN OLD DRUG—*ASPIRIN**

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For nearly 80 years aspirin has been used in clinical medicine, its most important contribution being its analgesic and antipyretic effect. It appears now that this old and established drug still has some surprises in store. The recent chain of pharmacodynamic investigations has opened new areas of interest in this simple organic compound and has suggested its possible use for prophylaxis in a wide range of thrombo-embolic conditions, acute myocardial infarction, post-operative deep vein thrombosis or embolism, cerebrovascular disease, in patients with valve prostheses, etc. and in metastatic spread of cancer.

Prophylaxis in thrombo-embolic conditions.—Aspirin is shown *in vitro* and *in vivo* to make platelets less sticky and prevent their aggregation (Weiss *et al*, 1968; Sutor *et at*, 1971; Mielke *et al*, 1973). This effect of aspirin persists for about 4–7 days following a single dose of 1·8 g. (Weiss *et al*, 1968). Reduction in platelet aggregation is shown to take place in two ways; aspirin inhibits the release of ADP from platelets which is know to increase their stickiness (Zucker and Peterson, 1967) and secondly, it blocks the adhesion of platelets to connective tissue or collagen fibres by acetylating them (Rosenberg *et al*, 1971). Based on these laboratory findings, it has been repeatedly suggested that aspirin possibly has a prophylactic effect in thrombo-embolic conditions (O'Brien. 1968; Wood, 1972).

Acute myocardial infarction.—Based on experimental evidence, Wood (1972) suggested that men over the age of twenty and women over forty should regularly take a single dose of 325 mg. aspirin daily on a long-term basis as a prophylaxis against myocardial infarction. Clinical confirmation to this effect was however lacking. In fact, the idea that regular aspirin intake can possibly reduce mortality from acute myocardial infarction arose as early as 1953. Cobb *et al* (1953), in a necropsy study, reported significantly less number of deaths due to myocardial infarction in a series of 197 patients of rheumatoid arthritis taking aspirin, as compared to the general population. Since then there was a considerable lapse of time probably because Cobb's study was not a statistically appropriate comparison and the effect of aspirin on platelets was presumably not clear at that time. The interest was revived when the Boston Collaborative Drug Surveillance Group reported in 1974 their findings of two large independent survey studies involving a total of 776 patients of acute myocardial infarction and 13,898 patients with other discharge diagnoses. They reported a strong negative association between regular aspirin intake and the risk of acu myocardial infarction, and concluded that their data is consiste with the hypothesis that aspirin provides protection again myocardial infarction. The same group, again in 1976, presente further provocative survey data and statistically confirme the negative association between regular aspirin intake and th risk of acute myocardial infarction. The combined data of th Boston group showed that among the acute myocardial infarctio patients, 0·9% of them were taking aspirin regularly as compare to 5% of patients in the control group. Whether this negative association of regular aspirin intake and the risk of acute myocardia infarction is casual or not requires controlled clinical trials i man. One such study (Elwood *et al*, 1974) compared 300 mg aspirin daily versus a placebo for the prevention of recurrence i men who had already suffered one infarct, The preventiv influence of aspirin was observed in this study, though it wa inconclusive; it reduced total mortality by 12% at six month and 25% at twelve months after admission to the trial.

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*Specially contributed to the 'Antiseptic'

It has also been suggested that enhanced antithromboti effect may be achieved by combining aspirin with other anti platelet agents such as dipyradimole (Weiss, 1976). In fact, on of the French investigator group (Douglas, 1976) is testing thi combination in prevention of recurrent myocardial infarction Thus there remains a possibility that aspirin alone or in combination with other anti-platelet agents is likely to be of majo value in the primary prevention of myocardial infarction perhap in the groups at high risk of the disease. Many clinical trial are in progress in different countries to confirm this effect o aspirin; one is being conducted by the U. S. Coronary Dru Project. It is hoped that a definite answer one way or the othe will be available soon.

Post-operative deep vein thrombosis or embolism.—Thrombo-embolic disease after major surgery, particularly the hip surgery is common. Conflicting results were reported in prevention o thrombo-embolism after surgery by different workers wit aspirin (Kakkar *et al*, 1970; Nicolaides *et al*, 1971; Butterfield *et al* 1972) and the other anti-platelet agent, dipyramidole (Salzmann *et al*. 1971). Some promising results were reported by Loew, *et al* (1974) with aspirin. Dipyramidole alone, although reducing th incidence of post-operative thrombosis, was not as effectiv as aspirin or oral anticoagulants (Salzmann *et al*, 1971). Late in a controlled clinical trial (Renney *et al*, 1976), a regimen o 1 g. aspirin with 100 mg. dipyramidole was shown to be a effective and simple method of reducing incidence of post-operative deep vein thrombosis in a series of 160 patients. Th therapy in this trial did not produce any complication and i was easy to administer.

Arterial thrombo-embolism in patients with valve prostheses.—The incidence of arterial thrombo-embolism is high in patients particularly with aortic ball-valve prostheses. The protective influence of aspirin was observed in a recent study (Dale, 1977) in 148 patients with valve prostheses. These patients received either 1 g. aspirin daily or a placebo, in combination with anticoagulants, and were observed for two years Only two emboli occurred in patients receiving aspirin, neither severe, but 12 thrombo-embolic episodes occurred in 10 patients in the placebo group; three with cerebral emboli died. Aspirin combined with anticoagulants seemed to offer better protection than did anticoagulants alone.

Cerebrovascular disease.—Transient cerebral ischaemic attacks are an important manifestation of cerebrovascular disease. This is another area where aspirin may prove helpful. The results of a double-blind trial in this field have been published recently (Fields, 1977). In this study, 178 patients who had carotid transient ischaemic attacks (TIA) were randomly allocated to aspirin or a placebo and followed up for 37 months to determine the incidence of subsequent TIAs, death, cerebral infarction or retinal infarction. Analysis of the first six months of follow-up showed a statistically significant differential in favour of aspirin when death, cerebral or retinal infarction and the occurrence of TIAs were grouped and considered as end points. However, when each of these was separately considered as an end point, no substantive differential was noted. One of the research workers (Dalessio, 1978) has suggested the use of these new and important observations in the management of TIA. If a repairable lesion is found in the appropriate site in a case of TIA, then surgery is recommended to the patient. If surgery is refused or if the patient is unfit for an operation he recommends the use of 300 mg. aspirin three times daily.

Related to the transient cerebral ischæmic attacks is the disease "Amaurosis fugax". It is characterised by recurrent transient uniocular visual loss due to a spasm of the retinal artery. Cases have been reported in literature of this disease responding dramatically to aspirin therapy (Harison *et al*, 1971; Mundall. 1972). Further controlled trials are warranted in this field to confirm these observations.

Metastatic spread of cancer.—It was first reported that under experimental conditions, aspirin was found to be effective in preventing the spread of malignant disease in mice (Kolenich *et al*, 1972). The mode of action of aspirin in this regard was explained as probably due to its anti-platelet effect. Similar results were reported by Powles (1973) in rats particularly in preventing bone metastasis but he suggested that the antimetastatic effect of aspirin was probably due to its inhibiting effect on production of destructive lysozymes and not due to its anti-platelet effect. Since then, considerable evidence (Bennett *et al* 1975 ; Lancet 1976; Bennett *et al*, 1976) has gathered linking prostaglandin to the formation of bone metastasis. In a recent study (Bennett 1977), it was also found that malignant breast tumours in human produce more prostaglandin-like material than did benign tumours or normal breast tissue. If prostaglandins have an role to play in spreading the malignant disease, aspirin's possible antimetastatic action can be explained by its inhibitory effect on prostaglandins which is established beyond doubt. Althoug the antimetastatic effect of aspirin has been confirmed also in some other animal species (Gasic *et al* 1973; Galasko *et al* 1976), direct evidence in humans is lacking. Powles (1975) reported at the first Symposium of Aspirin Foundation that a double-blind clinical trial using aspirin has been started in patients with primary breast cancer treated by mastectomy with or without radiotherapy. Who knows ? The entire outlook may change in times to come, for tumour patients who are prone to bone metastasis.

The recent work on aspirin in new fields has created considerable interest and excitement but the data so far available is only preliminary. The observations reported remain to be confirmed by rigidly controlled long-term trials. Such trials however, are exceptionally difficult and painstaking for a drug like aspirin, which has both wide spread availability and consumption.

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UN-CROSS-MATCHED BLOOD FOR EMERGENCY TRANSFUSION

One-years experience (56 cases) in the use of un-cross-matched blood for emergency transfusion in a teaching hospital showed that 49 transfusions were given as un-cross-matched group specific (AB.O and Rh) blood in emergencies. 77% of blood requests were for patients with trauma, unexpected massive intra-operative haemorrhage or ruptured aneurysm. Indications for emergency transfusion was questionable in 10 cases. 25% represented situations where there was neither hypotension nor bleeding but rather urgent indication for surgery. Since most patients who need emergency transfusions require simultaneous volume and RBC replacement, issue of whole blood is preferred rather than packed cells. The very patients who cannot wait for typing, and thus get O. negative RBC's are often those who most need whole blood. Group O whole blood, cannot be safely used in non O recipients unless donors with dangerous levels of anti A or anti B are eliminated. After administering several units of group O whole blood, it is inadvisable to return immediately to the recipient's hereditary blood type. Thus, either group-specific blood or group O packed cells must be used. Clearly, no one approach suits all cases, but if ABO grouping can be done adequately, it is preferable to use whole blood. There were no adverse effects noted eventhough complete serologic testing had not been done. While the use of un-cross-matched blood is usually safe, the potential for serious reaction exists. Overuse should be discouraged.—(*J.A.M.A.*, 3rd Nov. 1978).

ABANDOM RADICAL MASTECTOMY FOR BREAST CANCER

Radical mastectomy for breast cancer does not increase survival compared to more conservative operations and should be abandoned except in special circumstances says a report in the April issue of "Archives of Surgery." Many different surgeons were involved and each used the type of operation he thought best. Some were radical mastectomy, some simple mastectomy, some modified radical mastectomy, and a few simple removal of lumps.

An analysis of 1686 surgically treated carcinomas of the breast showed no statistically significant differences in five and ten-year survival for simple, modified radical, or radical mastectomy, the researchers conclude. Likelihood of cancer developing in the opposite breast decreased from 21% among women younger than age 30, to 5% among those 80 or older. Average for the entire group was 8%. There is no appreciable difference in ten-year survival in the age range of 35 to 75 years, but the disease seems milder in older woman who approach their normal life expectancy.—(*New York State Journal Medicine*, July 1978).

APLASTIC ANAEMIA—AN ANALYSIS*

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EHRLICH first described aplastic anæmia in 1888 as a rapidly fatal illness in young adults associated with pancytopenia and acellular bone marrow[1]. Since then, the term aplastic anæmia has been applied to a heterogenous group of conditions with several ætiologies and diverse natural histories.

Incidence.—Aplastic anæmia though uncommon, has to be considered in cases of severe intractable anæmias. Khosla *et al,* (1972) in a series of 346 cases of severe anæmia and related disorders have noted 14 cases of aplastic anæmia making an incidence of 4·4%[2]. Besides this, there have been only a few other reports of aplastic anæmia in our country[23, 24]. The death rates for aplastic anæmia have ranged from approximately 5 per million in the United States and Canada to 13 per million in Sweden[3 4, 5].

Classification of the aplastic anæmias :—

Acquired		Constitutional
1. Idiopathic	...	1. Fanconi's anæmia
2. Drugs	...	2. Familial aplastic anæmia
3. Chemotherapeutic	...	3. Amegakaryocytic Thrombocytopenia
4. Chemicals and toxins	...	4. Dyskeratosis congenita
5. Radiation	...	5. Schwachmann-Diamond Syndrome
6. Infection	...	—
7. Hepatitis	...	—
8. Pregnancy	...	—
9. Thymoma	...	—

Aetiology.—During the last 20 years a large number of agents have been incriminated in the production of aplastic anæmia. The common drugs among them are chloramphenicol, phenylbutazone and oxyphenbutazone, gold compounds, sulphonamides, streptomycin, tetracyclines and dilantin sodium. Aspirin is recent addition[6]. It is only by making careful lists of all preparations, however apparently innocuous—which have been taken by patients who have developed marrow aplasia that the potential danger of low-risk drugs becomes recognised. Aromati hydrocarbons like benzene and insecticides like gammabenzen hydrochloride and DDT are also known to produce aplasti anæmia. Infections like tuberculosis, viral hepatitis and other viral infections can also affect the bone marrow.

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*Specially contributed to the 'ANTISEPTIC'.

Idiopathic.—This term is used to denote the etiology in patients in whom no specific ætiological agent can be found. Obviously the assignment of a patient to this category depends on the thoroughness of the investigation.

Pathogenesis.—Drugs can produce aplastic anæmia in three ways. The first is the myelosuppressive effect of the cancer chemotherapeutic agents. These will invariably cause bone marrow depression if given in large or prolonged doses. The second is the dose related marrow depression leading to clinically insignificant pancytopenia occurring in some patients, with recovery after the drug is withdrawn. Examples of drugs acting this way are chloramphenicol, diphenylhydantoin, chlorpromazine, thiouracil and methicillin. The third method is by the 'idiosyncratic' or 'hypersensitivity' reactions.

Chloramphenicol.—The mechanism by which chloramphenicol (CAP) can act on the bone marrow has been under extensive study and there now appear to be two types of bone marrow toxicity produced by CAP.[7] (*i*) A dose related reversible depression affecting mainly the formation of the red cells but sometimes also platelets and granulocytes and (*ii*) A severe aplasia with pancytopenia which is uncommon, unpredictable and due to a 'sensitivity' effect. In the first type, the regular occurrence of reversible marrow suppression and the excellent correlation of the lesion with chloramphenicol blood levels suggest very strongly a direct metabolic effect of the drug on bone marrow cells. There appears to be some evidence now that this effect is due to inhibition by the drug of mitochondrial protein synthesis. The vulnerability of the erythroid cells to CAP is possibly due to the inhibitory effect of the drug on ferrochelatase-an enzyme which catalyses the last step in hemosynthesis, *i.e.*, coupling of iron to protoporphyrin occurring within the mitochondria. Much less is known about the mechanism by which CAP causes bone marrow aplasia. The rare occurrence of this complication and the lack of relationship to drug dosage or duration of therapy strongly suggest an individual predisposition. This could be a genetically determined biochemical predisposition by which CAP can inhibit nucleic acid synthesis in lesser concentrations than usual. The para nitro group in CAP structure has been implicated.

Phenylbutazone.—In recent years, aplastic anæmia following the use of phenylbutazone therapy has become commoner, perhaps, as a result of the increasingly widespread use of the drug. In some parts of the world, as matter of fact, this drug is commoner as an ætiological agent than chloramphenicol.[8] Hale and De Gruchy (1960) have noted in a report of 4 cases that aplastic anæmia occurred only after prolonged therapy with phenylbutazone.[9] Though the mechanism of action of the drug on the bone marrow remains obscure, there is circumstantial evidence that patients who develop aplasia after butazolidine, metabolise the drug abnormally slowly.[10]

Reports of aplastic anæmia following dapsone administration have been few. However, the close structural resemblance of dapsone to the sulphonamides, which are known to produce aplasia, suggests a similar mechanism. Gold is well known to produce aplastic anæmia[11, 12] and deserves special mention as it forms an ingredient of many indigenous drugs. Aspirin, though commonly regarded as a safe drug apart from its action on the gastric mucosa has been recently found to produce aplastic anæmia.[6] The possible mechanisms by which aspirin can produce aplastic anæmia have been studied, *in vitro*,[13] using passive hemagglutination technique with aspirin or an analogue linked to red cells. It has been found that this mechanism may be similar to that by which thrombocytopenic purpura is induced by aprobarbital. It consists of the drug being linked to a macromolecule—which may be a component of the cell membrane, with the cell thus acquiring antigenic properties producing what has been called "spoiled membrane allergy" [6].

Diphenylhydantoin and chlorpromazine have been found to produce aplastic anaemia by inhibiting DNA synthesis by the marrow stem cells[13, 14].

Infective agents.—Pancytopenia can occur as a rare manifestation of disseminated tuberculosis. The bone marrow may be normally cellular, hypoplastic or aplastic and there may or may not be tuberculous granulomas. In cases without local tuberculous disease, pancytopenia has been attributed to some occult effect of the tuberculous infection. It is necessary in these cases to rule out the possibility of the aplastic anaemia having occurred as a result of anti-tuberculous drugs.

Aplastic anaemia following viral hepatitis has been widely reported. Though the reason is unknown, viral damage to marrow chromosomes has been considered. Hepatitis following a course of chloramphenicol followed by aplastic anaemia has also been described as CAP-hepatitis-aplastic anaemia syndrome[15].

Complications.—(*i*) *Acute leukaemia*:—In the literature, 63 cases of aplastic anaemia have been reported to have progressed on to leukaemia[16]. The time interval between onset of aplastic anaemia and leukaemia has varied from 1 to 8 years. It is possible that the abnormal stem cell in aplasia is more susceptible to leukaemic transformation. However, the clinical presentation of aplastic anaemia itself may represent the first phase of the leukaemic process, characterised by slow growth of haematopoietic cells. A pancytopenic and hypocellular phase has been known to occur in acute lymphocytic leukæmia. But unlike true aplastic anæmia, the latter remits rapidly with corticosteroid treatment. On the other hand, both aplastic anæmia and leukæmia may have common ætiological agents. For instance, chloramphenicol, phenylbutazone, sulphonamides, benzene and radiation can produce either of the two disorders.

(*ii*) *Paroxysmal nocturnal haemoglobinuria (PNH)* :—This condition has been recognised to be a complication of aplastic anæmia. It is a stem cell disorder characterised by the production of abnormal cells in all 3 lines of the peripheral blood. These cells react abnormally with the activated components of complement resulting in increased hæmolysis and hæmoglobinuria. According to their sensitivity to complement PNH cells are graded into PNH-I, PNH-II and PNH-III with PNH-I being the least sensitive.

Management.—The first step in the management of patients with aplastic anæmia is identification and removal of any environmental agent that may be responsible. This necessitates a thorough questioning of the patient regarding his social and occupational background. However, in many cases the identification can only be an intelligent guess.

In spite of many developments in the management of patients with aplastic anæmia, the mortality rate continues to be high, ranging from 50% to 70%. Supportive therapy is aimed at survival of the patient, till, hopefully, remission can occur spontaneously or as a result of hormone therapy. Supportive care consists essentially of antibiotics for specific infections and transfusions of red cells and platelets when indicated. The frequency of blood transfusions should be based on the need to control symptoms and not aimed at maintaining the haemoglobin at any arbitrary figure. It has to be remembered that each additional transfusion adds to the iron overload, adds to the risk of the patient developing various antibodies and increases the risk of homologous serum hepatitis. Platelet concentrates are useful when there is bleeding but are not freely available in our country.

Since the introduction of anabolic steroids in the therapy of aplastic anaemia, various preparations have been evaluated [18, 19]. Comparative good results have been obtained with oxymetholone, testosterone esters and nandrolone decanoate The response if any, is slow and takes place only after therapy for 4–6 months.

Corticosteriods were introduced in therapy in the belief that aplastic anaemia could be an immunologic disorder (*vide infra*). But except in the case of pure red cell aplasia they have not been found to be effective. A short trial, carefully monitored, may be justified in chronic cases but the increase in risk of infection has to be kept in mind.

Marrow transplantation.—The marrow failure in aplastic anaemia may be due to a lesion in the stem cell, the micro-environment or humoral or other cellular elements. The increasing reports of successfull marrow transplantation in recent years seems to suggest that it is, indeed, a stem cell deficiency. Since the late 1940's when it was attempted on experimental animals, marrow transplantation has offered a hope of permanent recovery. The early attempts were mostly unsuccessful but with new knowledge in human histocompatibility typing, in the use of immunosuppressive drugs and management of patients with impaired defence mechanisms, results have been more satisfactory. However, in spite of successful matching of the major histocompatibility complexes HLA–A and–B, graft *vs.* host disease (GVHD) is encountered, probably as a result of minor histocompatibility complexes.

The immune defence mechanism of the recipient is suppressed by one of the following methods:—(*i*) Cyclophosphamide I. V. 50 mg/kg. body weight for 4 successive days. (*ii*) Total body irradiation (TBI). (*iii*) Anti lymphocytic serum (ALS) or anti-thymocyte serum (ATS).

Following the transplant, GVHD may be prevented by the immunosuppressive agent methotrexate given intermittently for 100 days. In established GVHD, antithymocytic globulin may be used.

Using the abovementioned method, Storb and Thomas (1978)[20] have performed bone marrow grafts in 110 consecutive patients of which 50 have turned out successful. The increased success rates of syngenic transplants, *i.e.*, between monozygous twins are well known and bone marrow transplantation is the treatment of choice in patients fortunate enough to have a monozygous twin.

On the other hand, there has been recent evidence to support the view that serum and cellular inhibitors have a part to play in the pathogenesis of aplastic anæmia. Hoffman *et al* in studying the effect of peripheral blood lymphocytes from seven patients with aplastic anæmia on erythroid colony formation by normal human bone marrow in an *in vitro* plasma clot-culture system, have found that lymphocytes from five of the seven patients caused a 79 to 94 per cent reduction of erythroid-colony formation.[25] They contend that the success of bone marrow grafts may be attributed to the massive immunosuppressive therapy received by these patients in preparation for transplantation. It is possible, however, that in the findings of Hoffman *et al*, the pathological operation of a normal control mechanism is being revealed that does not involve a specific immunologically directed assault on hæmatopoietic cells.

Present study.—A retrospective study based on the case records of 37 patients admitted in the Government General Hospital, Madras between 1973 to 1978 with aplastic anæmia has been done. The following diagnostic criteria used by Williams *et al* (1973)[4] were employed in the selection of cases.

(*i*) Pancytopenia—defined as a hæmatocrit (Hct) less than 38ml/100ml; neutrophil count less than 1800 cells/cumm. and platelet count of less than 140000 cells/cumm. at some time during the course of their illness.

(*ii*) Hypocellular bone marrow biopsy or when this is not available a hypocellular bone marrow aspirate with an illness otherwise typical of aplastic anæmia.

The study material consisted of 31 males and 6 females. This marked male preponderance is unlike that seen in most series reported from western countries where an equal distribution or a slight female preponderance is seen[21, 6]. The disease manifested itself at all ages, the youngest patient being 8 years old and the oldest 55 years. However, maximum prevalence was in the second and third decades. History of exposure to a possible ætiological agent was present in 16 of the 37 patients (42%) (*vide* Table I).

TABLE I

Showing the exposure history

Drugs	...	14
Dapsone	3	—
Chloramphenicol	2	—
Indigenous	4	—
Aspirin	2	—
Streptomycin	1	—
Penhyl butazone	1	—
Tetracycline	1	—
Tuberculosis	...	3
Viral hepatitis	...	4
Chicken pox	...	1

The commonest symptoms were related to anæmia (breathlessness, lethargy) and bleeding. The common sites of bleeding were the gums, gastrointestinal tract and nose. An infection was usually present in combination with other symptoms. Less common symptoms were diarrhœa, vomiting, fits and diplopia. Anæmia was present in all cases and three of them had evidence of congestive heart failure. There was no case with generalised lymphadenopathy. Either the liver or spleen (or both) were palpable in 8 cases and fundal hæmorrhage was present in 5 cases. The hæmatocrit was below 20ml /100 ml. in 35 cases. In the other two the values were 30ml /100ml. and 32ml./100 ml. The total neutrophil count was below 1800 cells/cumm. in 32 patients when first seen. In the other 5 patients, the count fell below 1800 cells/cumm. later on in the course of the disease. Though it has been recognised that infection produces a further deterioration of the bone marrow resulting in further decrease of the neutrophils[6], there was no correlation between the total neutrophil count and the incidence of infection in this series. The platelet count was below 80,000/cumm. in all cases The bone marrow showed a hypocellular picture (Fig. I and II) in all except 4 cases. In these 4 cases the cellularity was due to non-myeloid cells (lymphocytes and plasma cells).

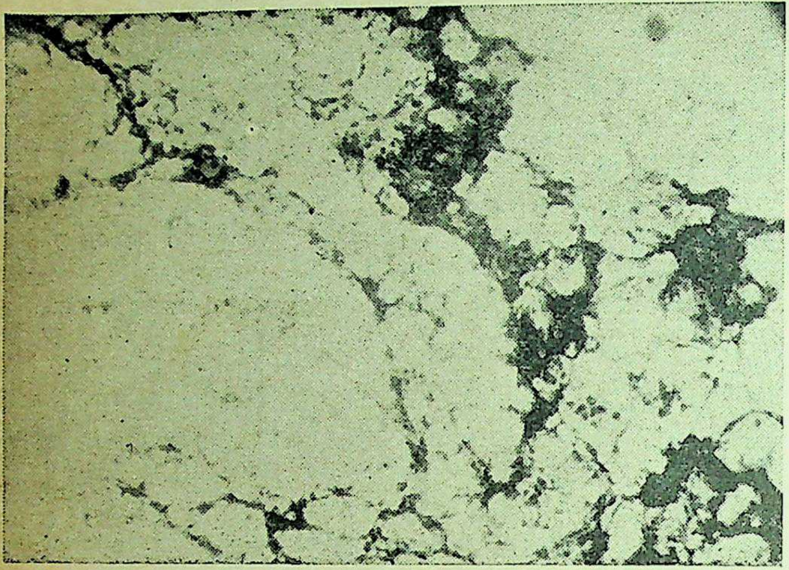

FIG. I.

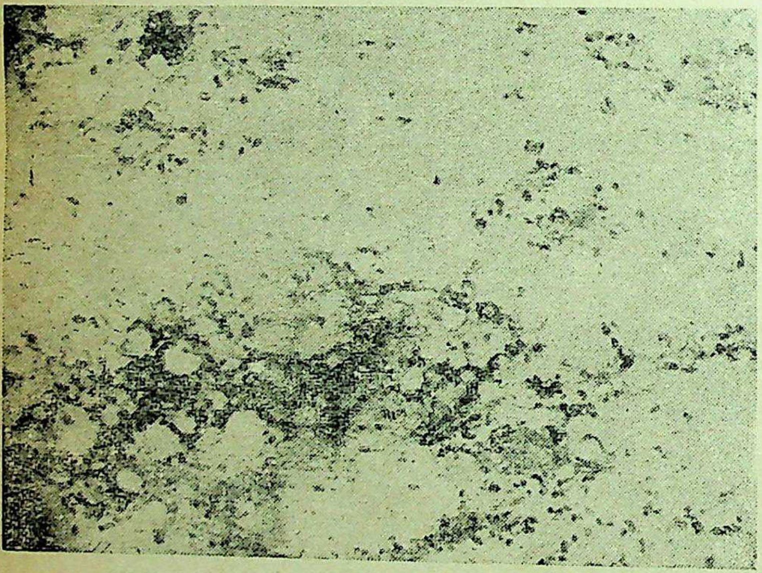

FIG. II.

Treatment was mostly supportive with transfusions and antibiotics. 25 cases were given a testosterone preparation in addition. Of these, 6 have died. Of the remaining 12, who had not been given testosterone, 6 have died. Of the 37 cases, 12 have died. The commonest causes of death were bleeding from the gastro-intestinal tract or intracranial hæmorrhage, congestive cardiac failure and overwhelming infection-

Conclusion.—Thirty-seven cases of aplastic anæmia admitted in the course of 6 years have been analysed. Various ætiological factors and methods of treatment have been discussed.

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MATERNAL HYPERTHERMIA AND FETAL MALFORMATION

Miller, *et al* studied the history of 63 women who had had one anencephalic offspring in the past 10 years. These mothers and a series of control women with normal infants were questioned about teratogens, illnesses and activities during the first trimester of pregnancy, with specific reference to any febrile illness or use of a sauna. Since the neural groove closes normally at about 23—26 days, any case in which hyperthermia (fever over 38·9C) occurred during the 3rd and 4th weeks of gestation was regarded as relevant, as was the use of a sauna at this time. Out of the 63 women who gave birth to an anencephalic child, 7 gave a positive history of hyperthermia near the time of neural grove closure. In five instances, the high fever was associated with illness in each case of a different type, and in 2 cases the presumed hyperthermia was due to sauna bathing. In contrast, among 64 controls no evidence of hyperthermia around the time of neural closure was reported. A further check showed that the frequency of maternal high fever with infection during the third and 4th weeks from presumed conception was 0·1% as against 8% frequency in anencephalic case group.—(*S African Medical Journal*, 24th June 1978).

BILATERAL CATARACTS IN ELDERLY WOMAN: SHOULD BOTH BE REMOVED?

Question.—An 80 years-old-woman has slowly developing bilateral cataracts, both in same stage, ready for removal. Although vision is poor in both eyes, she claimes that for years vision in the left eye has been better. There are no other eye complications. Results of a recent ophthalmologic examination for distance were as follows:

Right eye sphere (—) 8·75 cylinder (—) 2·00
Left eye sphere (—) 7·75 cylinder (—) 3·25

From these results can I assume that the left eye is the better one? In your consultant's opinion, which eye should be operated on first? Is the choice made at random, or should it be the eye with the better vision? If so, what is the rationale for the decision?

Answer.—This question is germane to all ophthalmology. No visual acuity is given for either eye, but the statement is made that the cataracts are ready for removal. I assume this meets the recommendations of the National Professional Standards Review Organization Council for removal of cataracts, which include the following criteria (1) a lens opacity that substantially interferes with the patient's mode of living, (2) a cataract that prohibits visualization for necessary intraocular surgery, (3) phacogenic glaucoma, (4) phacogenic uveitis. and (5) the patient's own sense of need for cataract surgery. (We all have patients with dense cataracts who are perfectly content. This is my own additional indication).

Judging from the spherical equivalency of the right and left eyes of your patient, I detect no noteworthy difference, so I cannot assume that the left eye is actually better than the right, particularly since the individual's acuities are not given. At age 80 years (depending, of course on the activity of the person) one need not necessarily consider operating on both eyes. Many patients in this age group will be perfectly contented with cataract removal on one eye, and this should also be taken into consideration. Therefore, if considering removal of only one cataract (and judging from the history that vision in the left eye has been better for years although poor in both), I would elect to operate on only her left eye and leave the right one alone unless the right lens is mature.—(*J.A.M.A.*, 3rd Nov. 1978).

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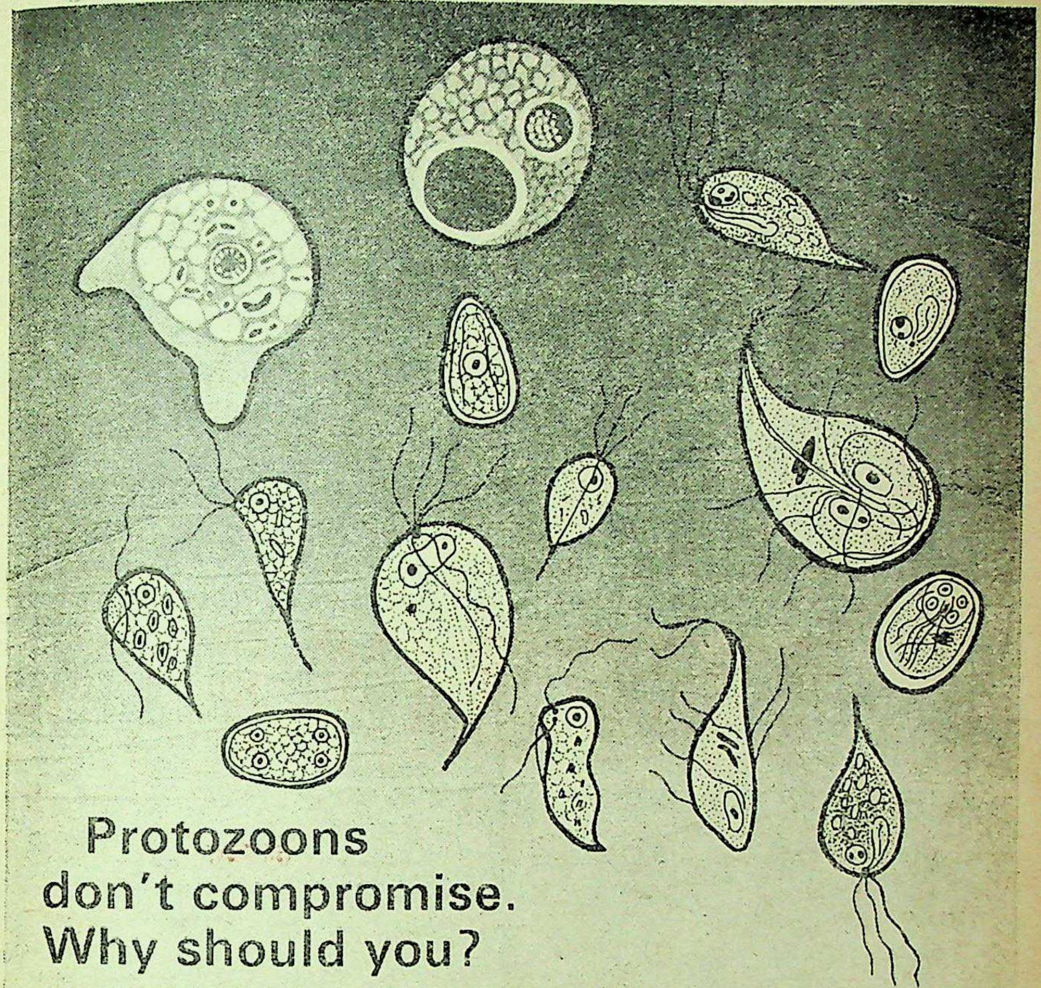

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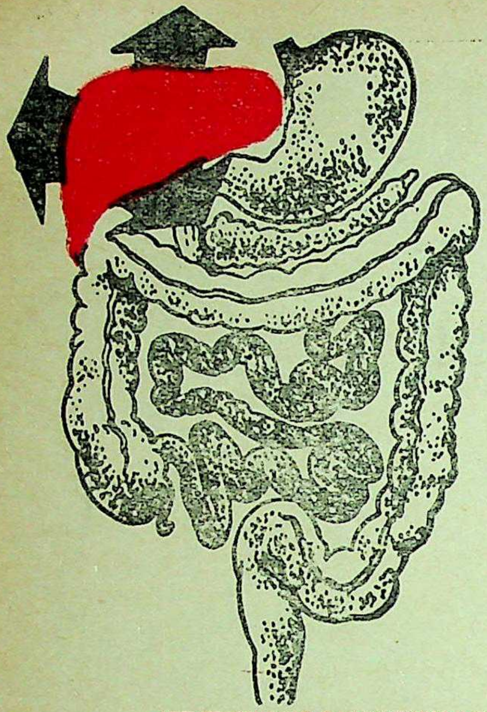

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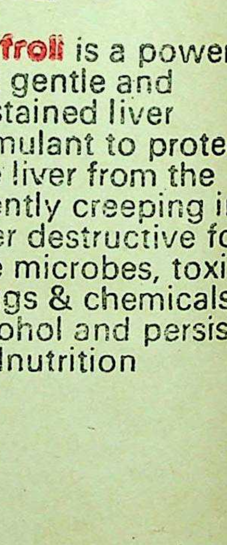

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WHAT IS GERIATRIC MEDICINE ?*

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INTRODUCTION :—The word "Geriatrics" was derived from the Greek word, "Geraios" meaning old age and "iatros" meaning medicine and was coined by Nascher in 1914. Geriatrics cannot be easily defined. Unlike other specialities it does not deal with a group of diseases, like rheumatology or a system like neurology. The British geriatric society has defined geriatrics "as the branch of general medicine concerned with the clinical, preventive, medical and social aspects of illness in the elderly".

Is there any age limit beyond which a patient can be called as belonging to the geriatric group? Strictly speaking old age is not entirely a matter of years. Some people continue to remain young even in their seventies while others seem old in their fifties or even earlier. For practical purposes however old age is best defined as the age of retirement, for it is at that time that the combined effect of ageing, social changes and diseases are likely to cause a breakdown in health. In the U.K. this means women over 60 years and men over 65 years. In India it has been fixed as 60 and above.

Elderly patients differ in many ways from the young; indeed such distinctions underlie the separate existence of geriatrics as a medical speciality. They differ mainly because of diagnostic, therapeutic and social problems.

I. **Diagnostic problems.**—There are certain difficulties in making an accurate diagnosis in the elderly. History taking in the elderly patient presents many special features and difficulties in comparison with younger adults. Mental impairment and deafness are the main communication barriers with the old people. They may not emphasise their problems very much. They may attribute everything to their age and tend to suffer in silence. So practice, skill and experience are needed in order to obtain adequate histories in geriatric work.

Atypical presentation of illnesses in the elderly is very common. Presentation may be obscure or misleading or less florid and dramatic. These special features provide fascinating diagnostic and management problems. Acute confusional state is the commonest presentation of physical illness in the elderly—*e.g.* chest infection, cardiac failure, pulmonary embolism, severe constipation. Drugs are another important cause for confusional state. Other patients may present with falls, again a situation which can easily be ascribed to old age itself, *e.g.*, stroke, myocar-

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Based on a lecture given at "First National Course of Gerontology" held at Lady Hardinge Medical College and Hospital, New Delhi, January 1979.

*Specially contributed to the 'ANTISEPTIC'.

dial infarction, etc. Only 20% of the geriatric patients will presenting with clinical features like chest pain or shock w myocardial infarction. Postural hypotension is an important ca for falls. Dyspnœa may be less common due to immobility. T regulation of body temperature is less efficient in the older pati and so fever is less severe.

A striking feature of disease in the elderly is that it is v often multiple. When dealing with younger patients, it is cus mary to try to explain every symptom, sign and abnormal labo tory finding in terms of a single pathological process. T approach is completely inappropriate in the old. Once people a in their 60s or 70s, they commonly show evidence of several dif rent pathological processes, some active, others inactive, b nevertheless contributing to the total disability, *e.g.*, osteoarthri osteoporosis, dementia, hypothyroidism, cancer, diabetes, depr sion, etc. One unfortunate consequence of multiple disease is t the symptoms and signs of a new disease may be wrongly attri ted to the old disease already diagnosed.

It is not always easy to distinguish between the chang which are attributable to age and those which are attributable disease, *e.g.*, osteoporosis; atherosclerosis; impairment of control of body temperature, maintenance of blood pressure change of posture.

The main aim of this section is to call for caution in t interpretation of signs which are usually of sinister importan in younger patients. In the elderly the same changes are som times completely innocent and occur in the absence of disea So allowances must be made for these changes in the clini examination; *e.g* :—hand muscle wasting is a common finding many geriatric patients in whom it may be of no clinical sign cance. A small irregular pupil could be confused for Ar Robertson pupil. Due to a decreased elasticity of arteries, slowly rising pulse of aortic stenosis may be less apparent. Som times JVP may be elevated on one side only that is on the l side. This is due to compression of the left innominate vein the markedly unfolded aorta. Sometimes basal crepitations m be heard whom no lung pathology is present.

A problem which commonly arises in investigating the eld ly is to decide what is normal and what is abnormal? Are standards the same as for the young or can some departure fr the usual standards be accepted as due to age? Many such qu tions are yet to be fully answered, particularly regarding la ratory tests.

Since chest disease cannot be excluded on the basis absence of clinical findings, chest X-ray should be part of routine investigation of all ill old people. But it is very diffic to get the co-operation, from the elderly patient. Constipat can cause some problems during investigation. Sometimes fæcal masses may make it impossible to obtain satisfactory views for IVP or barium enema. The white cell count is less often helpful than in the young as leucocytosis in response to infection and ESR tends to fall with age.

Urea, uric acid and creatinine tend to rise with age. It indicates a poor renal function; whether it is due to ageing or disease is not definitely known. Albumin shows a fall with age. The carrier proteins tend to fall to lower levels in ill old people, so the protein bound substances like calcium, thyroid hormones and iron will appear abnormally low. So allowances need to be made for these changes in interpretation of the biochemical data of the elderly ill. Proteinuria is common in the elderly. False results may be due to contamination, because of the problems of collecting a true-midstream specimen in immobile or confused patients. Regarding pulmonary function tests there is a progressive fall in the vital capacity as well as FEV_1 with the increasing age simulating "obstructive pattern".

II. **Therapeutic problems**.—Drugs are not the answer to our patients' problems. In geriatric medicine the aim of treatment is usually the amelioration of disease to the extent that the elderly person can return, in reasonable confort, to his normal way of life. Therapeutic problems are mainly due to :—

(1) Higher incidence of side effects, (2) Multiple therapy, (3) Drug interactions.

Drug side effects rise both with age and with the number of drugs prescribed. It is due to:—

(1) The active body mass tends to be less in old age, so that a relative overdosage takes place easily, *e.g.*, digoxin.

(2) Renal function declines with age. As many drugs. are excreted by the kidneys, their half life is generally prolonged and they become toxic, *e.g.*, antibiotics, digoxin, etc.,

(3) Many body systems appear to be more vulnerable to drugs in old age. The brain shows greater susceptibility so that drug induced confusional states occur far more commonly in the old. *e.g.*, diazepam, phenobarbitone.

Because diagnoses are often multiple in old age, the temptation to indulge in multiple prescribing is particularly strong. This multiple therapy will cause :

(1) Higher incidence of side effects, *e.g.*, cardiac failure and rheumatoid arthritis on digoxin, diuretics and steroids. The last two drugs will potentiate hypokalemia for which the elderly patients are more vulnerable.

(2) Drug interaction may occur when two or more drugs are given concurrently, *e.g.*, liquid paraffin commonly prescribed for constipation may inhibit the absorption of fat soluble vitamins.

(3) The commonest error of taking the prescribed drug the omission, mainly the important drug.

The treatment and rehabilitation given to the hospitali older person is a complex process necessitating a mulo-discip nary approach by a team of medically qualified and other qua fied workers (*e.g.*, in nursing, medical, social work, physical a speech therapy), specific disabilities calling for rehabilitati such as hemiplegia, parkinsonism, arthritis, fracture or ampu tion are particularly common in the old age. There are f situations where active rehabilitation is mandatory.

(1) Disability after acute systemic illness, *e.g.*, pneumon or myocardial infarction necessitating a period of inactivity ma lead to increased dependency and loss of mobility in an o person.

(2) Disability due to chronic locomotor disease, *e.* rheumatoid arthritis.

(3) Disability due to irreversible damage of acute ons *e.g.*, amputation or paraplegia.

(4) Stroke illness is very common in the elderly, rehabil tation plays a major role in the treatment of stroke.

Nursing care.—Elderly patients are characterised by the helplessness and frailty where nurses have play a great rol The following are the few examples :—

1. *Thinking for the patient* :—*e.g.*, old people are very like to neglect to drink sufficiently. So dehydration can readi occur unless the nurse is vigilant and helps the patient to dri fluids. Another difficulty is many elderly patients cannot be reli upon to take the tablets that the nurse has given them.

2. *Rest in bed* :—Since prolonged bed rest has got maj hazards for the elderly, like pressure sore, deep venous thrombos chest infection and immobility ; bed rest has to be minimised far as possible.

3. *Incontinence* :—It is a major problem in geriatrics an nurses have to play an important role in the management incontinence in the elderly patients.

4. *Regulation of the bowel* :—Faecal impaction is ver common in elderly patients. Nurses have to do rectal examinatio freely to recognise this situation and to sort it out.

5. *Pressure sore* :—The elderly are particularly at risk regar ing the development of pressure sore, because of their hea dependency and frailty. So nurses must take great care to preve these as they can have such adverse effects on the patient's pr gress or indeed survival.

III. **Social problems.**—Our knowledge of social proble of the aged of this country is indeed very scanty. Due to rap urbanization and industrialisation the joint family system breaking up in our country. In the past the aged were well accommodated in our joint family. Not only was their existence assured thereby, but their evening of life was made satisfied, happy and meaningful. Unfortunately the joint family system is fast disappearing in India and the elderly are left without support. There are two important solutions for this problem:—

1. The attitude of the young should be changed. If only they could learn to treat their elders more sympathetically and gain from their experiences, life would become simpler and happier for all.

2. Those who are without families or unable to live with families for various reasons should be accommodated in 'homes' for the aged.

Government, social bodies and private organisations must devote their attention to this pressing problem of the society.

"It is not enough for a great nation to have added new years to life. Our objective must be to add new life to those years" —John F. Kennady.

ESTROGEN AND THE POSTMENOPAUSAL BREAST

Estrogen replacement therapy following natural or surgical menopause may produce benign dysplastic or cystic changes in the breasts, which are demonstrable on mammograms. The most serious problem resulting from the presence of benign masses or proliferative changes in the breast is the possibility that coincident mammary carcinoma may be masked both clinically and radiologically. The changes following the discontinuane of the estrogen therapy may regress on follow-up mammography. Disappearance of definite cystic masses was demonstrated convincingly. In breasts of this type, it is difficult to feel confident either by radiologic study or by physical examination that a carcinoma is not present; consequently, regression of estrogen effects may render both clinical and radiologic evaluation more reliable. It is not claimed that withdrawal of estrogen therapy will prevent the development of cancer. It is suggested that the demonstration of a malignant neoplasm may be easier in women with this type of breast dysplasia do not receive estrogens. In high risk patients for the development of breast cancer, prompt cessation of estrogen therapy is worthwhile for reassessment.—(*J.A.M.A.*, 13th October 1978).

FAT NECROSIS OF THE BREAST

Fat necrosis may mimic malignancy on both mammographic and clinical examination. The mammographic appearance is a reflection of the reparative phase of the lesion, with a cystic appearance representing early or incomplete healing, Progression to connective tissue invasion appears as an irregular, dense, spiculated mass. Clinically, these tumors may be firm, fixed, and produce overlying skin or nipple retraction. No matter how strong the clinical suspicion that a breast lesion represents fat necrosis. an excisional biopsy is necessary for confirmation in all cases.—(*J.A.M.A.*, 21st July, 1978).

TERM PREGNANCY WITH UNRUPTURED HYMEN

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INTRODUCTION :—In adult virgin females, the hymen is a membrane of varying thickness that surrounds the vaginal openin more or less completely and presents an aperture varying in siz from that of a pinpoint to one that admits the tip of one o even two fingers (Eastman and Hellman, 1966). Usually th hymen ruptures during the first coitus but it may be so elastic a to stretch without laceration even after repeated coitus. On th other hand it may be so resistant that its removal is necessary i coitus is to be accomplished. Penetration is not essential for conception and in the present communication a case with term pregnancy is reported where only a very small aperture was presen in the hymen.

Case report.—Mrs. K.M., a 22 year old, primigravida, go admitted in this hospital at 7-32 P.M. on 5-8-'77 with the complaint of labour pains for the past 36 hours. A 'dai' had been summone at her home who referred the case to the hospital after attemptin to unsuccessful deliver the child for 8 hrs.

Menstrual history :—Menarche—13 years ; Cycles—regular Flow—average ; Dysmenorrhœa— + ; L.M.P.— ?.

The patient had been married for 5 years and she ha apareunia.

General examination :—Pulse — 92/mt. ; Blood pressure-150/90 mm. of Hg. ; Height—55 cm. ; Oedema—Nil ; Heart an lungs—N.A.D.

Abdominal examination :—The uterus was of term size an painful and sluggish contractions were coming on at intervals o 5—10 minutes and lasting for about one minute. The head wa presenting as L.O.P. and both poles were still palpable. The fœta heart was regular.

Local examination :—The labiae were well developed. Th urethral opening was normal. The hymen was intact and n opening could be detected at the first sight. It was elastic an could be depressed for about 1·5 cm. The membrane was abou 0·5 cm. thick. The lower pole of the head could not be felt throug the hymen. The lower part of the hymen revealed ecchymos due to repeated attempts made by the 'dai' to find out th passage. (*see* Fig. I).

A rectal examination revealed a fully dilated os with inta membrane. The head was in the LOP position. The promontory of the sacrum could be felt and both the ischial spines we prominent. The head could not be pushed inside the pelvis.

Urine examination revealed no abnormality.

Management.—In view of the cephalopelvic disproportion, abdominal delivery was decided upon and the patient was taken to the operating theatre. Under general anæsthesia, a careful examination of the hymen revealed a pinhole aperture about ½ cm. below the urethral opening though which a probe could be passed with difficulty. A lower segment Cæsarean section was performed in the usual way and a healthy female baby weighing 2-5 kg. was delivered. The baby cried soon after birth. There was no abnormality of uterus, cervix, tubes and ovaries. The kidneys were normal.

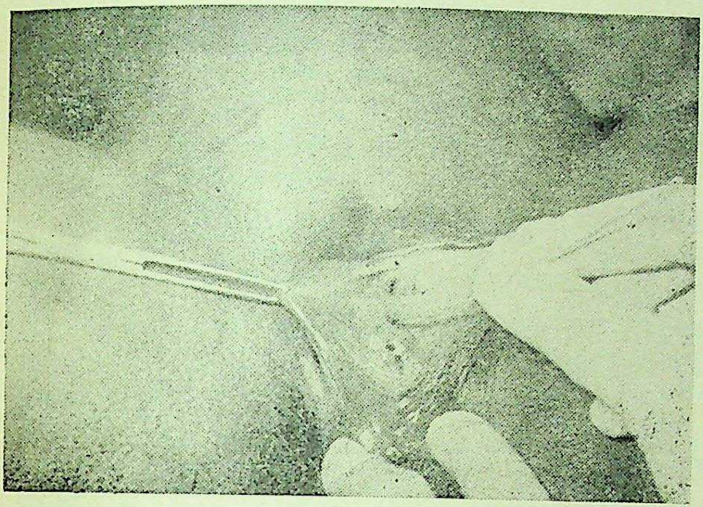

FIG. I. The probe has been introduced through a small opening in the hymen. The bruised area below the opening was made by the 'Dai' to find out the passage. There is no obvious vaginal opening.

At the end of operation the hymen was excised and blood clots in the vagina were evacuated and free drainage of lochia was ensured. The histopathological examination of the membrane was not done.

She made an uneventful recovery and was discharged on 14-8-1977.

Discussion.—Imperforate hymen and unruptured hymen are not synonymous. In the first named condition there is no opening in the hymen at all and mucocolpos or hæmatocolpos is the usual presenting feature. On the contrary, cases of unruptured hymen are usually associated with a very small aperture. This aperture may be difficult to locate particularly when the tissues are oedematous as in the advanced stages of labour. They suffer from apareunia or dyspareunia depending upon the degree of elasticity of hymen. Infertility is also a common complaint in these cases. Such was also the observation of Green Armytage who observed that 4% of all infertile women had intact hymen. In the present case pregnancy occurred 5 years after marriage. It is conceivable that the sperms must have been deposited over the membrane and they should have migrated all the way through vagino-utero-tubal canal to result in pregnancy.

Though there have been differences of opinion regarding the development of the hymen and vagina, the treatment of this anomaly is a simple excision of the obstructing membranous diaphragm. Novak *et al* (1965) have warned that the membrane should be excised as early as possible even before the onset of menarche lest it lead to mucocolpos. In labour the membrane should be excised only when the presenting part streches it, but in the present case Cæsarean section had to be done for disproportion and prolonged labour.

Summary.—A case of unruptured hymen with pinhole aperture with term pregnancy is reported. The patient had a history of apareunia and infertility. Though Cæsarean section was done for disproportion, vaginal delivery is usual. There was no associated abnormality of uterus, cervix, tubes or ovaries.

Acknowledgement.—I am grateful to Dr. S. C. Bhattacharjee, Chief Medical Officer for allowing me to publish this paper. I am thankful to Dr. D. C. Dutta, for his helpful criticism in writing this paper and Mr. R. K. Pal for taking the photograph.

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CARDIO RESPIRATORY ARREST IN DIABETIC AUTONOMIC NEUROPATHY

Lloyd-Mostyn and Watkins reported unexplained cardiorespiratory arrests in two diabetic patients with autonomic neuropathy. In an extensive study, Page and Watkins noted 12 such arrests in 8 young diabetic patients. These patients had had diabetes for 4 to 32 years. They all had florid clinical manifestations of autonomic neuropathy, postural hypotension. diarrhea, noctunal incontinence, gustatory sweating, and a high resting heart rate. All the cardiorespiratory arrests occurred in the hospital mostly in the wake of some exposure to anaesthesia, respiratory depressant drugs, or bronchopneumonia because these cardiorespiratory arrests occurred in conjunction with some interference with respiration, etc. Page and Watkins ascribe them to impairment of respiratory reflexes by diabetic neuropathy. This conclusion, eventhough based on indirect evidence, appears plausible. Supporting this conclusion, Pont, *et al* reported the occurrence of 2 cardiorespiratory arrests in a young diabetic woman with advanced diabetic autonomic neuropathy. Both episodes were associated, by vomiting, with aspiration of gastric contents and subsequent pneumonia. It is suggested that the autonomic neuropathy may cause an abnormal reflex response to small amounts of aspirated stomach contents. The lethal potential of the involvement of the respiratory system imposes yet another burden alertness on the physician, when he precribes respiratory depressants, administers anesthetics, or treats respiratory infections.—(*J.A.M.A.*, 13th Oct. 1978).

EPILOIA—(A CASE REPORT)

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INTRODUCTION :—Epiloia is an uncommon genodermatosis characterised clinically by a symptomatic triad of epilepsy, mental retardation and adenoma sebaceum.[1] Von Recklinghausen first described the syndrome in 1862. Other synonyms for this disorder are "Tuberous sclerosis," "Bourneville's disease, "Pringle's disease," "Brushfield and Wyatt's disease." It was originally reported as being confined to the poorer classes of the white races. Recently it has been reported to occur in all races.

This disorder is due to a defect in the mesodermal differentiation with a dominant gene modified by an independent pair of genes.[3] Systemic lesions reported to occur are cysts of the lung and small bones, tumours of the kidneys, liver, adrenal gland, thyroid. ovaries, gastrointestinal tract and rhabdomyoma of the heart.[5] Pulmonary lesions have recently been stressed.[4] Ocular lesions are characterised by phakomas, corneal opacities, coloboma of the irides and optic atrophy. A variety of dermatological lesions is said to occur in this disorder, of which adenoma sebaceum occurs in 90% of cases.[7]

Case report.—A young 15 years old boy was admitted with a complaint of convulsions since infancy refractory to conventional therapy. He was the second sibling of a non-consanguinous parents. No other member of the family had suffered from a similar ailment. The delivery of the child was normal. He had had multiple small eruptions over the face since his 8th year. He studied upto IVth standard regularly but discontinued the studies due to many failures in the successive school examinations.

Examination revealed mental retardation with an intelligent quotient ranging between 50 and 60. He had multiple papular eruptions over the nose and both sides of the nose, in a butterfly fashion and also over the cheeks and forehead. All other systems were normal.

Investigations.—The routine urine and haematological examinations were all within normal limits.

Mantoux–negative: Urine Toludine blue test for metachromatic granules–negative: Fundus–normal: CSF. analysis—not contributory: X-ray chest and skull—normal. Barium meal series—normal. Skin biopsy—showed adenoma sebaceum with hypertrophic and atrophic sebaceous glands in angiofibromatous Matrix. (*see* Fig. I.)

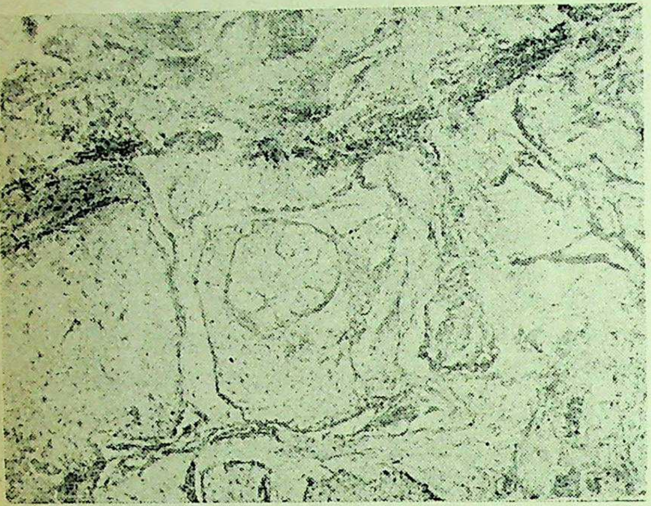

FIG. I. Markedly sclerotic collagen is seen around atrophic pilosebaceous structures. (H. E. x 10).

Discussion.–The complete clinical picture of this syndrome may not be seen in all cases due to variability in the penetration of the gene. Mental retardation is believed to occur in 60–70% of the cases. In four out of ten cases in Reddy's^6 series epilepsy dating from infancy, either focal or generalised was observed. Our case had mental retardation and generalised convulsions.

As already pointed out, adenoma sebaceum is the most pathognomonic dermal lesion which occurs in 90% of cases^7. In fact this nomenclature appears to be a misnomer as these lesions are actually angiofibromas and the sebacous glands are involved passively. Other dermal lesions like shagreen patches, periungual fibromata (Kœnen's tumours) white leaf shaped macules, fibromas of the scalp, forehead and gingiva, poliosis, *cafe-au-lait* spots, diffuse bronzing, freckles, cutaneous tags, hairy and vascular nævi, icthyosis, and plantar hyperkeratosis are said to occur in this disease^6. Our case had adenoma sebaceum which was confirmed histologically.

Cerebral lesions are important and diagnostic. They are visualised in the X-ray skull as multiple dense shadows referred as brain stones or potato nodes and are due to intracranial calcification. Our case had no such calcification. Rock^8 is of opinion that these lesions occur usually after adulthood.

Our patient had none of the systemic manifestations mentioned earlier.

Conclusion.—The case reported here, had epilepsy since birth, refractory to therapy. The adenoma sebaceum was proved histologically. The intracranial calcification was absent but it is neither a must nor could be made out before adulthood. Considering the young age of the patient, we are inclined to wait and watch the further developments.

Acknowledgement.—We wish to thank the Dean, Tirunelveli Medical College and Hospital for according permission to publish this paper. We wish to thank Dr. Rajasekeran, Assistant Professor of Pathology, Tirunelveli Medical College. Our thanks are also due to Thiru S. Bhuthalingam, Assistant, Thirunelveli Medical College Hospital for his secretarial assistance.

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TREATMENT OF LARYNGEAL CARCINOMA WITH CONSERVATIVE SURGERY AND POST-OPERATIVE RADIATION THERAPY

Thirteen patients with carcinoma of the supraglottic larynx (N=10), vocal cord (N=2), and pyriform sinus (N=1) were treated with conservative surgery followed by radiation therapy. This plan was chosen because clinically or histologically proven lymph node metastases were present and because the primary cancer had one or more of the following factors that were adverse to patient survival, (1) the tumor extended beyond the limits of safe, conservative laryngeal surgery ; (2) it infiltrated surrounding soft tissues, *i.e*,, pre-epiglottic space ; (3) it was close to the resected margin ; and (4) perineural invasion was present. Laryngeal function has been adequate in all but two patients ; one has persistent aspiration one year after treatment, and one has a narrrow airway after an extended supraglottic laryngectomy that included the anterior third of both cords and a portion of the subglottis at the anterior commissure with adjacent thyroid cartilage. One patient died in the immediate post-operative period, and this case cannot be evaluated. Twelve patients who completed treatment were followed up for a median of 30 months (1½ through 3½ years), and all have remained free of recurrent disease.—(*J.A.M.*A., 13th Oct. 1978).

TREAMENT OF ALCOHOLIC HEPATITIS WITH ENCEPHALOPATHY

A previous report demonstrated significant improvement of caloric intake and survival in patients with alcoholic hepatitis and hepatic encephalopathy given prednisolone when compared with placebo. The purpose of this study was to compare the effects of prednisolone with a regimen of 1,600 colories per day without prednisolone. Of 14 patients with alcoholic hepatitis and encephalopathy, all seven on caloric supplementation and two of seven given prednisolone died. ($P < \cdot01$) ; prednisolone therapy may reduce the mortality of those patients with alcoholic hepatitis and hepatic encephalopathy. This does not appear to be related to total caloric intake.—(*J.A.M.A.*, 21st July, 1978).

HERNIA OF THE LUNG

(A CASE REPORT)

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INTRODUCTION :—Bidstrup *et al.* (1966) have defined hernia of the lung as a 'protrusion of pulmonary tissue, covered by parietal and visceral pleuræ, through an abnormal aperture in the wall of the normal thoracic cavity'.

Hernia of the lung may be congenital (Rickham, 1959 and Salizberg, 1972) or acquired (Bidstrup *et al*, 1966; Baily and Love, 1943) in origin and it may be cervical, thoracic or diagphragmatic in position (Fraser and Peter Pare, 1970).

The review of the literature (Bidstrup *et al.* 1966) reveals that not many cases of lung hernia have been reported; 19 percent of the lung hernias were congenital and 82 percent were acquired (mostly post-traumatic). 35 percent of lung hernias were located in the cervical region and 65 percent in the thoracic region (true diagphragmatic hernia of the lung is a great rarity).

Spontaneous lung herniation occurs in the presence of a local impairment of the thoracic wall in association with increased intrathoracic pressure produced by protracted coughing. This generally occurs in the cervical region, possibly because of a congenital weakness in Sibson's fascia.

The rarity of the occurrence of spontaneous cervical hernia of the lung, prompted us to report this case.

Case report.—A 32 yrs. old male was admitted in the T. B. and chest diseases hospital, Goa Medical College on 5 1-1976 with complaints of paroxysmal cough with expectoration of long duration with an increase in severity during past 6 months, with gradual loss of weight marked weakness and breathlessness on moderate exertion. In addition, he complained of a very small reducible swelling in the right supraclavicular fossa of one month's duration.

Patient denied any history of local trauma. He had received anti-tubercular treatment (streptomycin and Isonex) for about 4 months and had discontinued it about a month before admission.

On examination.—The patient was of an average build and was co-operative. On admission his temperature was 99°F; pulse 90/min., B.P. 100/60 mm. Hg. marked pallor and clubbing were present. Examination of the respiratory system revealed the trachea to be central in position. Percussion dullness was noted on both upper zones, more marked on the left side and there was hyper-resonance on both lower zones. Harsh vesicular breathing was heard on both sides all over with fine and coarse crepitations at both upper zones especially on right side. No bronchial breathing could be heard.

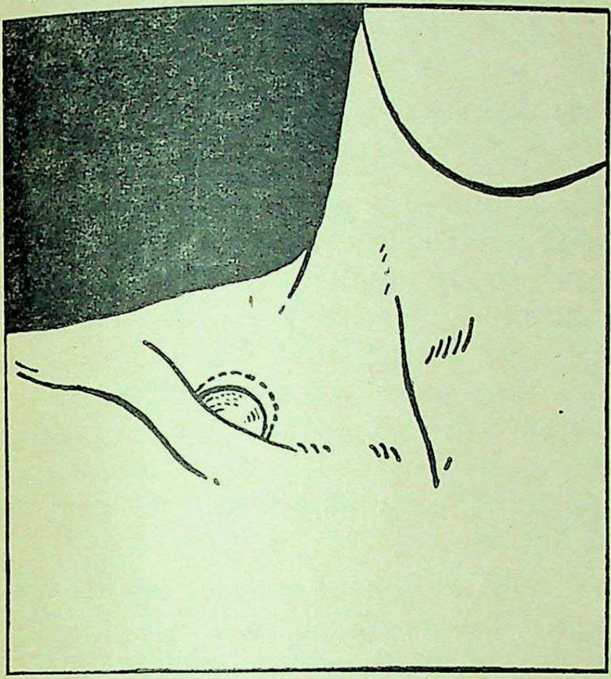

FIG. I Showing a diagramatic representation of a soft crepitant swelling of 2·5 cm x 2·5 cm in diameter in the right supraclavicular fossa which was reducible on lying down position, by manual pressure and which used to increase in size after every bout of coughing shown by interrupted lines).

Local examination.—A soft crepitant swelling of 2·5 x 2·5 cm. in diameter in the right supraclavicular fossa (Fig. I) was present which was reducible on a lying down position by manual pressure and which used to increase in size after every bout of coughing whenever there was increase in the intrathoracic pressure.

Investigations on admission.–Routine blood, stool and urine examinations were normal except that Hb. was 7·0 gm. percent and the sedimentation rate was 50 mm. (first hour Westergrens). X-ray chest: (Fig. II) showed bilateral pulmonary tuberculosis with multiple cavities in the right upper zone. Sputum smear for A F B was repeatedly positive. Barium swallow showed no abnormality upto the oesophagus and there was no evidence of a pharyngeal pouch. *Bronchogram* (*right sided*): Trachea and the right main bronchus were normal. Bronchial tree on the right side did not show any abnormality. The apex of the right lung showed multiple bullæ. No communication of the bronchial tree with bullæ could be seen.

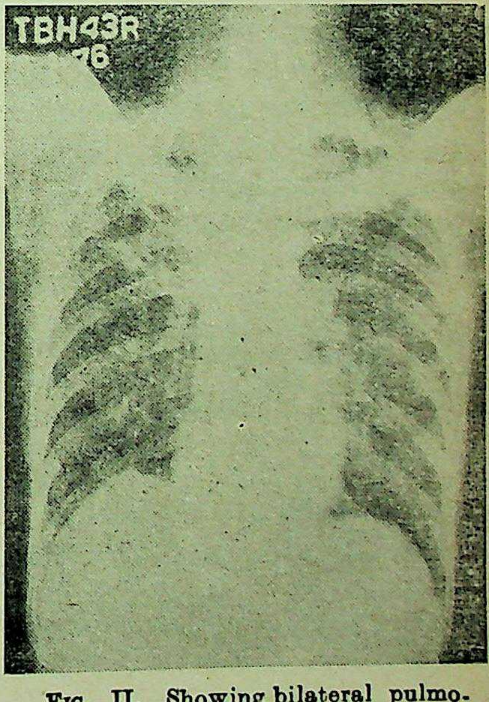

FIG. II. Showing bilateral pulmonary tuberculosis with multiple cavities in the right upper zone.

Progress. — Anti-tubercular treatment was restarted on admission. Antitussive drugs were administered and a pressure bandage was applied locally. The local swelling in the neck showed sudden increase in size and assumed the size of a ping-pong ball. The swelling burst producing a pin head-sized hole through which a sucking sound during inspiration and a hissing sound during expiration could be heard. The patient simultaneously developed surgical emphysema and expired on 23.2-1976.

Discussion.—Fenichel and Epstein (1955) reported 17 cases of cervical hernias and in their opinion supraclavicular herniation of a lung was not unusual. Bidstrup *et al*, (1966) analysed 25 cases (2 cases from their own study) and found preponderance of cervical hernia over the thoracic, contrary to the belief of earlier authors (Montgomery and Lutz, 1925 and Hiscoe and Digman (1955). This was the only case we came across over a period of 9 years. The increase in the intrathoracic pressure produced by the protracted cough on account of bilateral far-advanced cavitary pulmonary tuberculosis precipitated the development of the cervical hernia.

In view of our experience with this fatal case, it is advocated that the vicious circle of cough⟶increase of the intrathoracic pressure⟶increase in the size of hernia, has to be stopped by prompt control of cough and of the primary disease which produces it.

In the absence of discomfort, the approach should be conservative. A pad with suitable straps should be applied if the swelling causes discomfort or increases in size (Baily and Love, 1943). Surgical repair of the defect should be planned (Maurer and Blades, 1946 Romanish Mitchiner, 1948) in swellings which show a tendency to increase to avoid fatal complications.

Acknowledgements.—We are thankful to the Dean, Goa Medical College, Panaji Goa, for his kind permission to utilise the hospital records. We are also thankful to Mr. Antonio, G. D. M. Joao, for his secretarial help.

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DERMATITIS ARTEFACTA

(Report of 2 Cases)

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THE skin is a mirror reflecting expressions of emotions like fear, shame and anger. Psycho cutaneous disorders are those whose emotional origin is accepted by many as the primary etiology of the cutaneous syndrome. These include neurotic excoriations, lesions due to compulsive movements, phobias and delusions, trichotillomania and dermatitis artefacta or factital dermatitis. Dermatitis artefacta is a self induced lesion occurring in emotionally unstable persons who produce it knowingly or unknowingly often in their sleep. It is common in hysterical women, adolescents, young adults and seen particularly in schizophrenics. These people are usually deprived of love and affection and they harbour an inferiority complex.

Dermatitis artefacta shows wide morphological variations. It appears in crops and has a distinct rectilinear or bizzare pattern over readily accessible-areas of the body. The lesions are rarely seen on the right hand or right wrist unless the patient is a left handed individual. Patient strongly denies self infliction. The skin is injured by means of finger nails, sharp instruments, caustics, cigarettes and elastic bands which may produce bone lesions. Injuries are also produced by various acts like biting, clenching, excoriating, licking, pulling, rubbing and by application of pressure. Patients exhibit extra-ordinary cunning and ingenuity.

Dermatothlasia is a condition of cutaneous necrosis caused by an uncontrollable desire to rub or pinch oneself and it can be precipitated by pinworm infestation.

Psychological aspects.—The self-inflicted skin lesions when made consciously are often with the intent to elicit sympathy, escape responsibilities or to collect disability insurance. It has been found that sexualised aggressive feelings originally aimed at key figures during the first year of life probably play a major role in the pathogenesis.

The exploration of ambivalent conflict situations of the patient is an integral part in the diagnosis and treatment.

A sudden extensive eruption of destructive nature which seems to have emerged in an unnaturally short period of time and the dubious appearance of the lesions arouse suspicion. One conclusive test is the disappearance of the lesion under occlusiv dressing and constant surveillance. These lesions should b clinically differentiated from lesions of polyarteritis nodos and porphyria cutanea tarda. Laboratory tests however ar confirmatory.

The handling of these patients is not easy. The most important step is to make them understand themselves. It is usual f the doctor who diagnoses the case to take up an accusing, moralistic stance and persuade the patient to confess his crime. Thi reduces the patient's position to that of a defendant and this i not helpful to his mental recovery. The doctor's aggressive att tude can reinforce the patient's aggressive impulses and th patient forms an impression that the doctor is a policeman o judge, in such cases the therapy should be carried out by anothe physician.

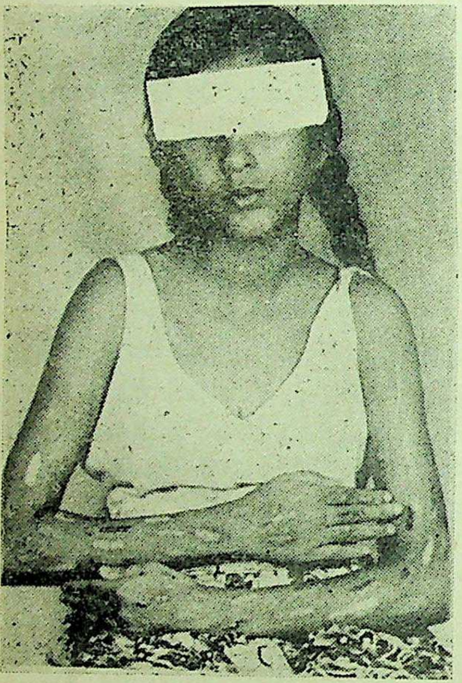

FIG. I. (CASE I) Characteristic rectilinear lesions symmetrically seen over the upper extremities and resolved lesions over the chest.

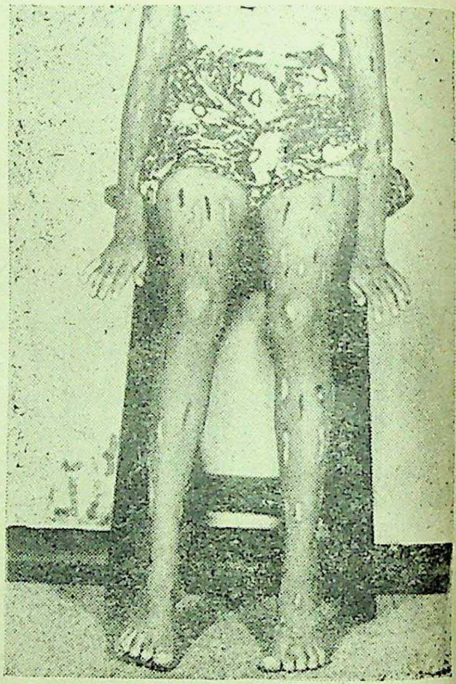

FIG. II. (CASE I) Characteristic bizzare, rectilinear lesions symmetrically placed over the upper and lower extremities.

Case reports.—(CASE I) :—A fourteen year old girl attende the skin department at Govt. General Hospital, Madras o 18-4-1973 for the complaints of rectilinear skin lesions over th extremities and chest, developing over a course of 2 month She complained of a burning sensation over the lesions. Patien was the last child in the family and an average student in schoo Clinical examination revealed bizzare, symmetrically space oozing and impetiginised skin lesions, over the accessible areas the extremities (Fig. I and II). The back was completely spared (Fig. III). The hair, nails and mucous membranes were normal. There was no adenopathy. Routine urine, motion and blood examinations showed no abnormality. Skin biopsy showed features of chronic dermatitis. The patient was then referred to the psychiatrist and subsequent psychoanalysis revealed no positive finding. However it was labelled as dermatitis artefacta and the patient was discharged with the advice to continue psychotherapy.

CARE II:—A eleven year old boy was admitted in the skin ward at Government General Hospital, Madras on 24-2-1975 for the complaints of erythematous lesions of short duration with occasional itching. On further questioning he stated that the lesions were produced by vigorous scratching with his nails to relieve itching. He had similar skin lesions prior to it. Patient had an average I. Q. and was in school. Clinical examination revealed rectilinear, erythematous macules over the front of chest and upper extremities (Fig. IV) distributed symmetrically over accessible areas. Mucous membranes, hair and nails were normal. Routine blood, urine and motion examinations revealed no abnormality. Psychiatric evaluation could reveal no precipitating cause. Since the lesions were said to appear and disappear at fixed timings, a diagnosis of dermatitis arterfacta was made. Psychoanalysis revealed social problems with the authorities

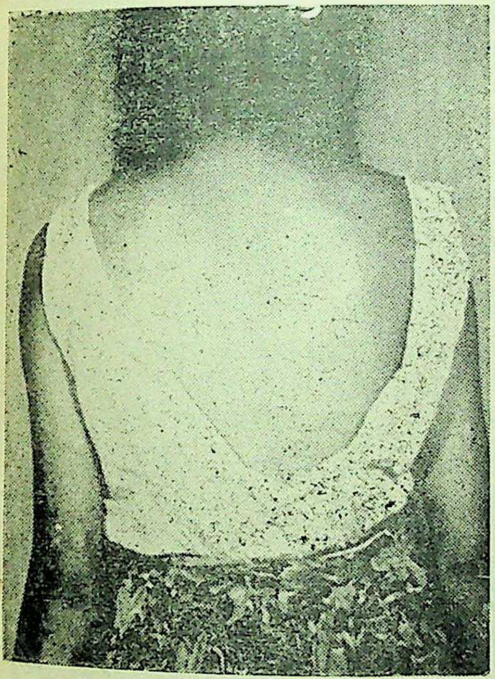

FIG. III. (CASE I) The back which is not an accessible area is completely spared.

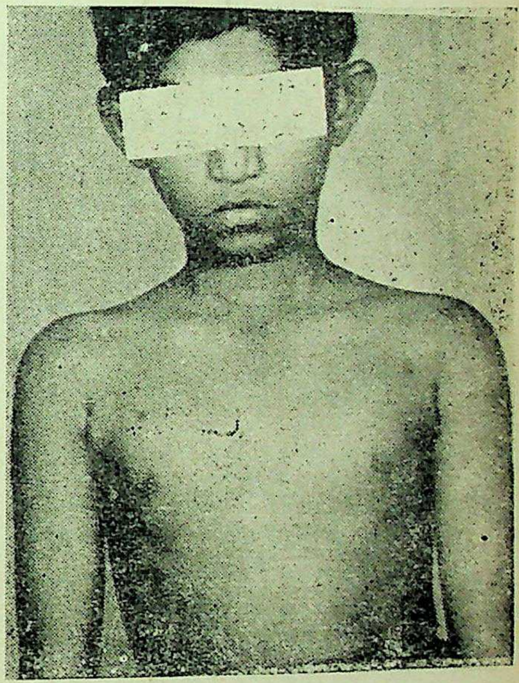

FIG. IV. (CASE II) Bizzare, rectilinear lesions over the chest and shoulder region resembling bruises.

of the school he was in, though the patient did not conne those problems with his skin lesions. The patient was the discharged with the advice to continue psychotherapy.

Discussion.—The above cases illustrate the typical clinica picture of dermatitis artefacta. Unfortunately, both the patient did not come for review. These patients need in addition t cutaneous therapy, an intensive psychotherapy. Dermatit artefacta is usually seen as a neurotic symptom that is as th expression of emotional conflcts. The exploration of this i needed to comprehend the hidden emotions, *e.g.*, anger, guilt an anxiety. The need for punishment is a strong initiating forc which finds an expression in damaging that part of the bod which can be seen by others. This is a means by which th patient tries to reveal his feelings of guilt, a desire to be punishe so that his guilt feelings decrease. In youngsters there is ofte an unresolved emotional relationship with the parents or certai social problems like schools.

In all these cases psychotherapy should be carried out b qualified psychiatrists. This often consists of psychoanalysis an behaviour therapy. Unfortunately they do not always end i disappearance of symptoms. Often after months, even after th patient becomes less neurotic the neurotic, skin symptom persist.

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INDERAL IN MIGRAINE A NEW INDICATION

Inderal is now indicated for the prevention of migraine and recurrent vascular headache from a 1st December 1978. The standard starting dose for adults with migraine is the same as for patients with hypertension 40 mg. twice a day. Response occurs usually in the range 80 to 160mg per day, which should be evident within three months. Starting dose for children is 10 mg. once or twice a day, increased as required up to 2 mg /kg. body weight per day in divided doses. If a response is to occur it should be evident within three months. There is no experience in children under the age of seven years.—(*Medical Journal of Australia*, 2nd December 1978).

CHILDHOOD TUBERCULOSIS

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PART I

No problem has aroused more controversy or evaded a solution so doggedly in chest medicine as the one relating to tuberculosis in children. It is indeed a paradox that unlike tuberculosis in adults, the number of children, especially from the middle and higher income groups, receiving the treatment, appears to grossly over-ride the number who according to the estimates require the treatment, in several parts of India. The enormous over-diagnosis in certain sections is due to the formidable diagnostic difficulties offered by the disease in children on the one hand and due to the under fear of the grave risk of encountering the serious forms of tuberculosis in children such as tuberculous meningitis, miliary tuberculosis, etc., on the other. Unfortunately, inspite of the over-diagnosis most of the children seem to get inadequate and irregular treatment. It may also be true that children who have definite evidence of the disease are mostly receiving grossly inadequate therapy while some of those whose condition does not warrant therapy receive meticulous antituberculous therapy.

Magnitude of the problem.—Nobody knows for certain the exact magnitude of the dreadful scourge in children, particularly in those of less than five years of age as this age group cannot be included in photofluorograpy surveys due to technical difficulties. However, some reports on certain epidemiological indices are available, some indicating high figures of prevalence, incidence, etc. and some suggesting low figures. In the past it was believed that the number of children infected by mycobacterium tuberculosis was very high in view of the high prevalence of the disease among the adults. From the general or pædiatric hospital records, very limited epidemiological conclusions can be drawn, particularly in the case of tuberculosis in children. So also very little reliance can be placed on the statistics obtained from the Institutions dealing with tuberculosis.

Figures which may reflect the current thinking on the magnitude of the problem, in India, are shown in Table I which seem to be surprisingly low, for most of the adults of more than 25 years are infected, and more than two million fresh cases arise every year among the total population, in India. (Table I)

It is to be inferred from the low incidence of infection i the child population that the magnitude of the disease in chil ren would not be high. Even the susceptibility and mortalit rate appear to be on the lower side contrary to the earlier expe tations. A good majority o young children who gre around infective mothers shar ing the same bed were observe to have escaped the infection A greate majority of childre who died in hospitals wer observed to be "tuberculin nega tive".

TABLE I

Showing prevalence and annual incidence of tuberculous infection in children, in india

Age group	Prevalence of tuberculous infection	Annual incidence of tuberculous infection
0 — 4 years	2%	1%
5 — 9 years	8%	1%–4%
10 — 14 years	16·5%	2·1%

The problem of over-diagno sis in many cases leading t unnecessary, prolonged, an sometimes hazardous treatment, and also under-diagnosis i many cases resulting sometimes in a tragic end, is due to th paucity of precise methods to detect the disease in children.

History and symptoms.—Information obtained throug eliciting family history and history of contact is mostly unhelpfu in the diagnosis in a country like India where there are mor than nine million persons suffering from tuberculosis. However the history may be helpful in some cases, particularly in plannin a drug regimen in the case of a child in close contact wit an infectious index case, for the organisms causing the disease i the child are most likely to be of the drug sensitivity status o the bacilli harboured by index case. Measles and whooping coug are notorious for predisposing the children to tuberculosis.

Symptoms in childhood tuberculosis are very vague and no characteristic. The symptoms of lassitude, peevishness, under weight, poor appetite, asthenia, inactiveness, fever, cough, et are common to many diseases and disorders in the childhood. A child not thriving well, a kid having some enlarged cervical lymph nodes, a tot having recurrent attacks of coryza associated with cough, or a toddler complaining of vague abdominal symptoms have often become unwarranted targets for anti tuberculous therapy including the unending and terrifying poke of streptomycin to make the tender child's life miserable wit all the attendant adverse psychological impacts. It is in this con text that a child should not be treated just as a miniature replic of an adult. The cause in most of these cases may be anythin but tuberculosis such as protein-calorie malnutrition, recurren sore throat, chronic tonsillitis, respiratory allergy, respirator viral infections, amoebiasis, helminthiasis, etc. which are o quite common occurrence in children.

Physical signs.—Here again, there is no specificity. I primary disease of the lungs, the mediastinal lymph nodes ar more involved than the parenchyma of the lung which exhibits few physical signs. Localised wheeze and bitonal cough may be indicative of compression of the airways by mediastinal lymph nodes. In caseous pneumonia, allergic pneumonitis, and progression to adult of disease the expected signs may be obvious.

Unequivocal matting of the lymph nodes, usually of the deep cervical group, offers a valuable clue as to the aetiology though in the rare cases of "pseudo-lymphadenomatous" variety, matting and caseation are absent. Sometimes, even by histopathological examination a tuberculous node of that variety may be mistaken to be one of Hodgkin's disease. A primary focus is supposed to be in the tonsils or somewhere in the drainage area for which a search has to be made. It needs a lot of experience to differentiate, clinically, the tuberculous nodes from those due to recurrent episodes of non-specific infection of tonsils and upper respiratory tract occurring very commonly in children.

Phlyctenular conjunctivitis when associated with some other relevant signs is a good pointer towards tuberculous ætiology. Pyrexia, signs of meningeal irritation, clouding of sensorium, tense fontanellae and choroid tubercles indicate hæmatogenous dissemination and meningitis which indicates a grave prognosis.

Signs pertaining to tuberculosis of bones and joints, and serous cavities, particularly of pericardium should be borne in mind. Other sites of primary infection such as intestines, conjunctiva, genito-urinary organs, and skin and the respective regional lymph nodes should not be neglected.

Tuberculin test.—A simple and straight forward test sometime back, the tuberculin test has of late become a matter of controversy in its interpretation. The relevance of the test to diagnosis in India to-day is not the same as it was a few years ago. Scores of children even recently, were put on antituberculous treatment mainly on the basis of a "Positive Mantoux". Improper reporting and recording of the tuberculin reaction by unqualified persons as "Mantoux positive" or otherwise is to be deprecated. It is recommended that the result be expressed in terms of *millimeters of the average diameter* of the induration atleast one millimetre thickness after 48 to 72 hours following an intradermal injection of *one TU* of PPD RT 23 with Tween 80, containing 0,00002 mg. of PPD in 0·1 ml. Not long ago, a reaction of more than 5 mm. was considered to be indicative of tuberculous infection. But now, in view of low-grade (0 to 7 mm.) *non-specific reactions*, it is generally advocated that a reaction of more than 10 mm. (some recommend more than 15 mm. for fresh infection) only is indicative of tuberculous infection. Mycobacteria other than *mycobacterium tuberculosis* have been incriminated for the non-specific reactions. In some parts of India, th non specific sensitivity was found to be as high as 80 per cent an in South India, especially, a significant proportion of the population respond to the tuberculin by the low-grade reactions.

Fixing 10 mm. or 15 mm. is in a way, an arbitrary decision t label the cases as infected or otherwise. Even if a clear cu demarcation point is taken as granted, the test would, at best indicate only whether an individual at present is or in the pas was infected by *mycobacterium tuberculosis*. Neither the presenc of the disease nor the degree of activity of the disease can b ascertained by the degree of the induration. It is generally conceived, albeit wrongly, that a "strong positive" (meaning a reaction of more than 15 mm.) reaction is proof of an activ disease, and that the more florid the response to tuberculin th more active the disease is likely to be if the disease is tuberculou A reaction of more than 15 mm may at the most indicate a recen infection or a high hypersensitivity producing capacity of an individual. It is also a common practice to test a "Mantoux negative individual with a higher strength of tuberculin. This is scientifically irrational as is the case with using BCG for diagnos is. A higher strength of tuberculin may also enhance the non-specifi reactivity, in addition to the possibility that repeated tuberculi testing may by itself lead to hyper-reactivity.

It is generally viewed that a "Negative Mantoux" is of grea significance under the conditions obtained in India so as t exclude tuberculous ætiology, though a "possitive Mantoux" doe not necessarily confirm tuberculosis. Likewise, it is construed b some that if a repeat test with 100 to 250 TU does not elicit reaction of more than 4 mm,, tuberculosis can be ruled out wit considerable certainity. But from the point of view of the rat of hyporeactivity and non-reactivity observed by certain worker it seems that even a "Mantoux negativity"cannot be interpreted a plainly as was being done. Surprisingly high rates of hyporeactivit and nonreactivity to tuberculin due to cell mediated immune defic ency in patients proved to be suffering from active tuberculosi have been observed. Since BCG vaccination is being given t infants soon after birth, tuberculin test would not be of muc help in the diagnosis in the successfully vaccinated children.

However, inspite of the very many limitations which mak the tuberculin test to be of limited value in the diagnosis o tuberculosis in India to-day, the test *done properly* and *interprete intelligently* may still be very useful in the differential diagnos of a number of cases in view of the low prevalence of tube culosis infection among the young children, and the unsati factory BCG coverage, thanks to the inefficient performanc by the National Tuberculosis Control Programme.

Chest skiagram.—Radiographic examination of the chest has been acknowledged as a highly sensitive but a poor specific investigation in pulmonary tuberculosis, since numerous diseases and disorders may radiographically mimic the lesions of tuberculosis. Despite the limitation, a fairly accurate identification of lesions as compatible with the diagnosis of tuberculosis can be made in many cases of adult type of the disease. But in children in whom most of the lesions are of the childhood type of the disease, a lot of experience, balanced judgement, and critical clinical acumen are mandatory to identify the radiological abnormalities as compatible with the diagnosis of tuberculosis.

As already mentioned, the lymph glandular component, usually on the affected side, in these cases is more pronounced and the peripheral parenchymal lesion may not be visible. Mediastinal lymph node enlargement, unless considerably voluminous, may be masked by the other structures in the mediastinum and the sternum. The thymus, which may radiologically be visible over a considerable extent in young children causes extreme difficulty in differentiating it from the mediastinal lymph node enlargement. Reticular shadows fanning out from the hilum, particularly into the upper zone are sometimes characteristically present in progressive primary complex. Prominent bronchovascular markings near the hilum are often misread for these changes.

Most of these young pædiatric patients fall into a radiological group where the dividing line between normalcy and disease is very thin indeed. It is so thin that in one study comprising of about 650 chest skiagrams in children, only in less than half of the cases was there unanimity among two experts. That a diagnosis of tuberculosis should not be made on radiological findings alone, especially in children, needs no emphasis.

Dense extensive homogenous shadows which may be due to collapse of a part of the lung, inflammatory exudation as in allergic pneumonitis, or caseous pneumonia can readily be made out on a radiographic examination but differentiation is often difficult. These pathological changes occur due to pressure by the lymph nodes on a bronchus, endobronchial spread of the disease, or discharge of caseous material from the lymph node into a bronchus. Theterm "epituberculosis" is often used to denote this situation.

In some cases the primary lesion may progress actively and merge directly into the adult type of the disease, as happens not uncommonly in India and Africa, which can be easily discerned on a skiagraphic examination. Lesion of the miliary type would not be difficult to recognise.

Laboratory diagnosis.—Direct evidence of tuberculosis in children is mostly unobtainable. Sputum is neither produced in sufficient quantitis nor expectorated by the children. Gastric lavage for obtaining the swallowed sputum, in most cases, is neither rewarding nor practicable in routine practice, and moreover causes considerable distress to the child. Facility for culture and animal inoculation are limited to only a few centres in India. Histopathological examination of lymph nodes may yield confirmatory results in the cases of lymphadenitis. Cerebrospinal fluid examination in all suspected cases of tuberculous meningitis is imperative.

[To be continued]

IS LINIMENT USEFUL IN COMMON MUSCLE INJURIES?

Question.—Patients with muscle strains and contusions ask about the use of liniment and similar remedies for symptomatic treatment. Is there any physiological justification for their use in addition to treatment with wet or dry heat?

Answer.—Most of the proprietary preparations available over the counter for use as a counter irritant have as a principal ingredient methyl salicylate, with additions of camphor or menthol (oil of wintergreen). These are referred to as rubefacients, since they produce a hyperemia of the skin and a feeling of warmth. Rubefacients increase the time required to fatigue a muscle, and the muscle increases its capacity for work. They have been shown to cause a reflex rise of the temperature of deeper muscle layers underlying the application. They also may "overload the input" thereby reducing discomfort from the deeper-lying sources of pain such as a tight-fitting bandage or transcutaneous stimulation would do. They are useful for symptomatic treatment of self-limited conditions. Heat should not be applied during or immediately after the application of the rubefacient because of the danger of burns to the skin.—(*J.A.M.A.*, 8th December, 1978).

CORTICOSTEROIDS IN THE TREATMENT OF ALOPECIA TOTALIS

Fifteen patients with alopecia totalis (AT) or alopecia universalis (AU) were treated with combined topical, intralesional, and oral corticosteroids. All or virtually all scalp hair has regrown on seven patients who have discontinued oral corticosteroids without recurrence of AT or AU for periods of three months to 7 1/2 years, with an average remission of 32 months. Two additional patients are currently receiving 5 mg. of prednisone every two days. Using topical and intralesional corticosteroids in more resistant areas allowed for more rapid lowering of oral doses and thus side effects were minimized. In view of the usually nearly hopeless prognosis for AT and AU and the results reported here, a trial course of topical, intralesional, and oral corticosteroid treatment would seem to be reasonable for highly motivated patients.—(*J.A.M.A.*, 3rd November 1978).

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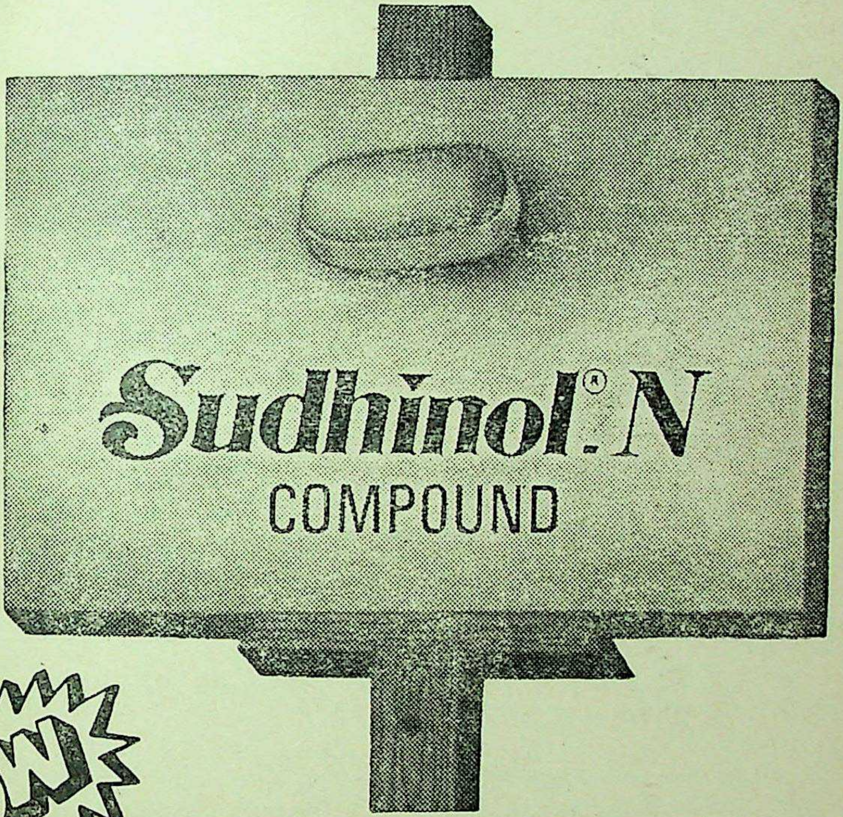

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The Antiseptic

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Editorial

MEDICAL EDUCATION IN THE REGIONAL LANGUAGE : IS IT DESIRABLE?

It has been recently reported that Dr. Simhadri, a member of the excutive committee of the Indian Medical Council, who is at present on an inspection tour of the various hospitals in the different States, has stated that English should continue as the medium of instruction in all medical colleges in our country, to enable the students have a certain amount of uniformity in their education and to keep abreast of the latest advances in the medical sciences. This is indeed a welcome statement from an important member of the council and should be taken note of by those politicians and educationists who have recently been advocating the use of the regional language as the medium of instruction in the medical course.

Analysing the difficulties that are bound to crop in the wake any such unwanted change, one cannot but notice that there are certain formidable problems to be solved in trying to achieve this change-over. Several voluminous medical books in English will have to be translated, a task which will not only take many years to complete but one which is likely to be a complicated process in view of the fact that many technical terms may defy such translation without distortion of the sense or meaning. Further in view of the enormous cost that may be involved, many private agencies may hesitate to undertake this task of translation. It is therefore inevitable that the Government may either have to undertake the work by themselves or heavily subsidise these private publishers.

If medical education is imposed in the regional language, each State in India will automatically get isolated resulting in considerable difficulties while organising Seminars, Conferences, etc, on an All India basis, much more so at International levels. Exchange of views on medical sciences, so necessary and vital for improving one's knowledge, will come to a standstill. The Oft-repeated excuse that in many countries abroad, the medical sciences are taught in the national dialect, does not hold good for us since we, unfortunately, do not yet have a single national language but have different regional languages in different States.

It is therefore absolutely necessary to retain English as th medium of instruction for all medical subjects in all medica colleges in our country as also to adopt uniform standards of medi cal education throughout our Nation. Ideally this should enabl a medical student to prosecute his medical studies in any colleg (though in practice this itself is hindered by states-wise restric tions), exchange his views on medical topics at various Conference in a single language, contribute useful papers to various medica journals in our country and abroad thereby keeping abreast o advances in every branch of medical science.

Medical education is a highly specialised one and requires th utmost care and precision in planning the details of the languag in which it is taught and the yearly curriculum to be adopte for the course. Let the experts in the field decide withou any pressure from politicians and non-medical educationist We have no doubt that the experts will vouchsafe our view an uphold our plea that under the conditions at present prevailin in our country, English alone should be the medium of instruc tion for medical subjects.

DIAGNOSIS AND THERAPY OF CHRONIC ACTIVE HEPATITIS :

Chronic active hepatitis (CAH) as an entity covers a histologically, biochemically, and clinically heterogeneous group of patients. Hence, there is no justification for treating all patients with this diagnosis with corticosteroids. On the basis of histological, biochemical, and clinical criteria, different degrees of severity of CAH can be distinguished. While corticosteroids appear to be indicated in severe CAH, they should, in general, not be administered in mild CAH. However, the course of disease must be carefully followed in these patients. In moderate CAH, the risk should be carefully weighed against the benefit of therapy in each patient, taking into account the severity of symptoms. In HB Ag. negative cases, a therapeutic trial of at least six months' duration is worthwhile. In HB Ag-positive patients, treatment with corticosteroids should be delayed and the course of the disease followed. Once the decision for corticosteroid therapy has been made, administration of 10 mg. prednisolone and 50 mg. azathioprine daily as a maintenance dose represents the therapy of choice. This combination is approximately as effective as 15 to 20 mg. prednisolone alone, but is associated with a lower incidence of side effects.—(*J.A.M.A.*, 21st July 1978).

APPENDICITIS IN INFANCY

One percent or 40 infants treated for acute appendicitis were younger than 2 years of age. Nineteen had an appendix mass at the time of the diagnosis. Conservative management followed by delayed elective appendectomy is a safe and effective treatment.—(*J.A.M.A.*, 3rd Nov. 1978).

GLEANINGS

MEDICINE AND THERAPEUTICS

Treatment of migraine-acute attacks.— (*B.M.J.*, 7th Oct. 1978).

Most patients with mild attacks are helped by aspirin or paracetamol with an antiemetic metoclopramide (Maxolon 10 mg.) if there is nausea. For the more severe attack ergotamine remains most effective. Ergotamine or analgesic should be taken as soon as the attack starts. One tablet of Migril (ergotamine tartarate 2 mg. cyclizine hydrochloride 50 mg., caffeine 100 mg.) is prescribed, the dose being adjusted on the patient's response. Patients who cannot tolerate ergotamine orally can be given subcutaneous or I M. injections 0·25 mg. Despite inconvenience of administration, many prefer cafergot suppositories (ergotamine tartarate 2 mg., caffeine 100 mg., belladonna alkaloids 0·25 mg., isobutyl allyl barbuturic acid 100 mg.) Patients may be instructed about the maximum amount of ergotamine that can be taken in a week *i. e.*, 12 mg., Some become dependent on ergotamine, and ergotamine headache is a definite entity that is not always recognised, more ergotamine is mistakenly given to cure, and a vicious circle is established. This drug should not be given in pregnancy or to those having ischæmic heart disease, peripheral vascular disease, or renal or hepatic disease. Cluster headache is best treated with subcutaneous ergotamine, and prophylactic ergotamine should be given subcutaneously or by suppository for the next 3 nights after which the patient is allowed 48 hours free of drugs to see if the attack occurs. Migraine status (recurrent attacks without remission) is a medical emergency. Patients are exhausted and often dehydrated. They may be heavily sedated with parenteral barbiturates or chlorpromazine and the dehydration corrected; steroids may have to be used on rare occasions.

Myocardial infarction and other vascular diseases in young women.—(*J.A.M.A.*, 1st December, 1978).

1. This illness is rare in women younger than about 40 years. In the current series of 83 cases, only 13 (16%) were women younger than 39 years. In the series of 60 cases, of Mann, *et al* there were none-younger than 30 years.

2. The illness is prepondarently one of cigarette smokers. In the present series 74 of 83 were smokers as compared with 67 of 153 controls.

3. Hypertension, diabetes, angina, toxæmia, and past myocardial infarction, doubtless increase the risk substantially. In the current series, about 40% occurred in women with predisposing illness.

4. In otherwise healthy young women, estrogenic drugs notably increase the risk of (M.I.) myocardial infarction. In the current series among the 49 patients with no known predisposing medical conditions, 34 (69%) were users of a drug containing estrogens compared with 19 (19%) of 102 controls.

5. In as much as there were no patients with fewer than one of the above risk factors, the role of other factors such as family history, serum lipid levels, ABO blood type, and obesity seem to be restricted mainly to women who have one or more of the other risk factors mentioned.

In the studies of the Royal College of General Practitioners and Vessey, *et al*, 10 of 12 deaths from M. I. occurred in oral contraceptive users (about 50% of the women were oral contraceptive users).

In 3 cases reported by Vessey, *et al* the women were smokers. When deciding whether to prescribe these drugs, physicians ought to consider the risk of stroke and venous thrombœmbolism also.

In evaluating the role of oral contraceptives in the case of stroke and venous thrombœbolism, it is important to consider the many conditions that predispose to these. Hypertension, rheumatic heart-disease, trauma, and congenital arterial abnormalities contribute to a substantial proportion of stroke cases; trauma surgery, pregnancy, and past episodes of the illness predispose to venous thrombœmbolism. In the Boston Collaboration Drug surveillance program, 11 of 14 women with idiopathic stroke were oral contraceptive users compared with 7 of 56 controls, and 31 of 43 women with idiopathic venous thrombœmbolism were oral contraceptive users compared with 170 of 842 controls. In the two studies combined, *i.e.*, RCG follow up study and Vessey, *et al*, 13 of 16 deaths from stroke, and venous thrombœmbolism occurred in oral contraceptive users. "Thus it appears that a healthy woman younger than 35 years taking oral contraceptives will not experience much risk for myocardial infarction if she is a non-smoker, whereas a non-smoking, oral contraceptive-using woman younger than 35 years seems to have a risk for stroke and venous thrombœmbolism. similar to that for an older oral-contraceptive-using woman who smokes. ABO blood type has been reported to be an important risk factor for idiopathic thrombœmbolism in young women. The risk is estimated to be 3 to 4 times higher among women with non-O-blood type (AB or AB) as compared with women with blood type O.

Psychiatric drug therapy.—(*New York State Journal of Medicine*, July 1978).

These are cases of excessive response to medication. For example mania treated too vigorously with tranquilisers will give way first to remission and then to depression. Conversely, depression treated too vigorously with anti-depression drugs, will result in remission and then by mania. Similarly, the elevated form of schizophrenia treated too vigorously with tranquilisers will be succeded by remission, and then, in some patients, by depression, and the depressive form of schizophrenia, conversely, treated too vigorously with anti-depressive drugs, will remit, and the remission succeeded by an elevated form of the disease.

Usually both tranquilising and anti-depression medication will have to be given together in carefully regulated amounts.

Drug therapy of mental illness can fail for any of the following reasons: (1) Drug may be administered or taken improperly ; (2) Side effects of medication may limit dosage and therefore effectiveness ; (3) The drug, may fail because it is not sufficiently powerful to overcome the illness ; (4) The drug may be administered in inadequate or excessive dosage ; (5) The wrong drug may be selected for the condition to be treated ; (6) Drug therapy may not be the appropriate treatment for the presenting condition.

Successful drug therapy may dissipate the illness but leave the patient unprotected against the stress so that, lacking insight he engages in inappropriate and injurious behaviour.

Adrenergic blockade in hypertension.—(*J.A.M.A.*, 13th Oct., 1978).

Hypertension with its sequelæ is the second most common cause of mortality after atherosclerosis in the U.S. It is suggested that hyperactivity of the central and peripheral sympathetic nervous system either in response to stress or *de novo*, leads to hypertension, in some. Longstanding hypertension increases the sodium content of the arteriolar wall and leads to structural changes. Excessive adrenergic activity and consequent changes in vascular tone result in stimulation of the renin-angiotensin system, which plays a key role in initiating hypertension. Based on plasma renin activity, hypertensive patients have been classified into high (20% of patients) normal (about 60%) and low (20%) renin activity groups.

Propranolol, the only β adrenergic blocker available for clinical use is a competitive antagonist of isoproterenol and exerts potent cardiac, peripheral vascular, and bronchial β-adrenergic blocking effects. I. V. administration of propranolol, results in a decrease of heart rate and cardiac output, a rise in systemic vascular resistance, and no change in B/P. With oral administration, heart rate decreases, and cardiac output falls within a few hours. Increase in heart rate and B/P in response to exercise is also blunted. Several studies suggest that central actions of propranolol are as important as the cardiac and peripheral β-blocking actions in lowering B/P. In addition, this drug lowers plasma renin activity on the β-receptors in the kidney, and indirectly. by its effects on the C.N.S.

The dose of propranolol for control of hypertension has varied from 60 to 2000 mg/day in divided doses. α-adrenergic blockade would be rational in the treatment of hypertensive subjects with increased systemic vascular resistance. α-adrenergic blockers available include phentolamine mesylate and phenoxybenzamine hydrochloride. They are potent vasodilators by virtue of their α-blocking properties. Administration of these agents alone, parenterally or orally, results in prompt and sharp fall in arterial pressure and vascular resistance—A combination of α and β blockers simultaneously would appear to be justified, since β blockers can effectively blunt the reflex tachycardia in response to α blockade induced hypotension. In a study using a combination of phenoxybenzamine and propranolol, effective control of B/P and a slight decline in heart rate were observed. Concurrent use of hydralazine and propranolol also results in similar control of B/P but with a few more side-effects. Diuretics still remain the first step in the treatment of essential hypertension. They are effective by decreasing the salt load and reducing the overall blood volume. A decrease in blood volume may lead to excessive catecholamine release and plasma renin activity and the anti-hypertensive effects of diuretics may thus be limited. Prazosin hydrochloride (Minipress) a new vasodilator appears to be an effective antihypertensive agent devoid of many side effects. In patients with mild hypertension, where diuretics alone fail, the addition of propranolol can have additive anti-hypertensive affects by its actions on C. N. S. and plasma renin activity. In moderately severe hypertensive patients, propranolol minimises the side effects of potent vasodilators and α-blocking agents.

OBSTETRICS AND GYNAECOLOGY

Anaesthesia for Caesarean section.—(*South African Medical Journal*, 23rd Sep. 1978).

Pulmonary aspiration of acid gastric content during induction of recovery from general anaesthesia is a serious hazard to patients who require urgent operation. Therefore, parturients presenting for emergency Caesarean routinely have a large bore (28FG) stomach tube passed. Metoclopramide a new anti-emetic agent that increases gastrointestinal motility may be given (I. M.) pre-operatively. All receive 30 ml. of mist mag trisillicate orally 30 minutes before surgery. During normal labour antacid therapy should be repeated at least every 2 hours. The pregnant mother must inhale pure oxygen *via* a non-rebreathing circuit for a full 5 minutes before anaesthetic induction to load the blood and tissues to full capacity with oxygen. During this time, atropine 0·6 mg. and metoclopramide 10 mg. are injected simultaneously *via* the infusion tubing, followed by a sensitising dose of a non-depolarising muscle relaxant (alloferin 2·5 mg. pancuronium 1 mg. or d-tubocurarine 4 mg) I. V.

Anaesthesia is augmented from the outset with enflurane 0·6 to 1·0% or halothane 0·3 to 0·5%. Provided the induction to delivery interval is not too prolonged (less than 15 minutes) the new born suffers no ill effects.

At termination of surgery, the residual effect of the non-depolarising muscle relaxant is reversed by I. V. injection of 1·2 mg. atropine and the max dose of 5 mg neostigmine. It is felt that obstetric anaesthesia should only be undertaken by persons able and prepared to apply resuscitative techniques, to the newborn rapidly and skillfully, such as endotracheal intubation, manual ventilation of the lungs and umbilical vein cannulation. All necessary equipment for these manoeuvres must be at hand. Vigorous suction of the child's pharynx is not without danger and may cause vagal syncope (cardiac arrest) and laryngeal inhibition or spasm (respiratory arrest). Therefore the suction catheter should only pass a predetermined distance to the back of the pharynx and no further. Under ideal circumstances the anaesthetist should never be responsible for both mother and child, thus reducing the level of care for both.

Very early abortion.—(*S. African Medical Journal*, 30th Sept. 1978).

Vaginal administration of natural prostaglandins for termination of pregnancy has mostly given disappointing results and is associated with many side-effects, but certain analogues have proved more effective. Intra-uterine instillation through a catheter gives more consistent results, but with the risk of severe side-effects. An Oxford group report of the use of vaginal or intra-uterine prostaglandins to terminate pregnancy in women whose period has been delayed for 3 —35 days. is reviewed. A variety of prostaglandins were used, and the best results were obtained by using two—16 : 16 dimethyl PGE$_2$ vaginal pessaries inserted at 6 —8 hour intervals. Earlier the treatment is given after the missed period, the greater the success rate, and the more often the abortion is complete. If bleeding does not begin within 7 days, the method has failed. 14 patients needed uterine curettage for excessive or prolonged bleeding and 2 needed, blood transfusion. Vomiting, diarrhœa, and uterine cramps occurred in the first 24 hours. One with an IUD in situ developed acute pelvic sepsis, and required bilateral salpingectomy. Since then, all IUD's were removed before treatment.

Do all pregnant woman need iron
(*B. M. Journal*, 11-11-1978).

Hemminki and Starfield have qu tioned the value of this practice a reviewed recent trials of iron proph laxis and found no evidence of bene to either the mother or the foet Anæmia in women is less common th formerly. Anæmia in pregnancy, whi is mainly due to preceding iron de ciency, is also less common. Iron stor in adult women average 250 mg. b over 400 mg. may be required for max mum erythropoiesis during pregnanc Clearly most women will be unable meet this demand, and depletion iron is the physiological consequen whether or not iron is given. Neve theless, in effect, the iron is on borrowed by the erythron, since is largely returned after delivery. Svanberg *et al* have commented, lo iron stores do not have the sam importance in pregnant women as the non gravid; and in practice ha have restored their depots within months of delivery. Further matern iron deficiency does not lead to ne natal iron deficiency.

Prophylactic administration of ir may certainly raise the hæmoglob concentration. Hemminki and Starfie found no direct relation between ir deficiency and complications such prematurity, fetal distress, pre-eclam sia and hæmorrhage though they d not take into account the withdraw of anæmic patients from the trials th reviewed. Anæmia remains as a pote tial danger, if hæmorrhage shou supervene. Maintenance of the hæm globin concentration at non pregnan levels does not seem necessary. Unor tical prescription of iron is both wast ful and sometimes unpleasant for t women taking it. The gastrointestin side effects are well-known. Fortun tely the suggestion of a teratogen effect has been refuted Surely obst ricians need no longer give all expecta mothers iron in an attempt to preve appreciable anæmia.

EAR, NOSE AND THROAT

Glue ear and grommets.—(*B. M. Journal*, 4th November, 1978).

Non-suppurative otitis media is the most common cause of loss of hearing in children. The condition known as "glue ear', exudative, secretary, or catarrhal otitis media is characterised by the collection of sterile fluid of varying consistencies in the middle ear. It may best be called mucinous or serous otitis media depending on how thick the effusion is; cytological examination of middle ear effusions shows polymorphonuclear cells, macrophages, lymphocytes, plasma cells, and cell debris, further evidence of an inflammatory cause. The long-term sequelæ of glue ear include adhesive otitis media, thinning of the drum head, development of tympanic membrane pouches, cholesteatoma, atrophy of the ossicles, chalk patches, and prolonged malfunction of the eustachian tubes. The primary cause of accumulation of fluid in the middle ear is dysfunction of the eustachian tubes. This may be associated with deficient palatal musculature in cleft palate, enlarged adenoids chronic sinusitis or allergic rhinitis, all of which may be aggravated by repeated infections of the respiratory tract. In children the clinical features of glue ear include recurrent earache, repeated attacks of otitis media, loss of hearing and occasionally speech problems. Surgery is generally required, though, when a glue ear is of recent onset, conservative treatment may be justifiable with antibiotics and oral decongestant agents. If it does not resolve within 4 to 6 weeks, then surgery should not be postponed further. Some otologists advocate inserting ventilation tubes or grommets if myringotomy has failed. Grommets are not a new invention. The disadvantages of grommets include the need to keep water out of the external auditory canal (to avoid suppurative otitis media) and recurrent extrusion. Long-term trials in children comparing a myringotomy with the single insertion of a grommet have shown that the gain in hearing was superior after using grommets-so long as they remained in situ.

SURGERY

Clean technique versus sterile technique for tonsillectomy and adenoidectomy—(*New York State Journal of Medicine* April, 1978).

It is virtually impossible to carry out certain operations under completely sterile technique. These include, for example, hemorrhoidectomy, incision and drainage of pilonidal or perianal abscess, and procedures in and about the oral cavity. Sterile technique still remains a ritual even in situations where true sterility cannot be achieved.

In this study, sterile technique was defined as those well-established methods used in the institutions for any open surgical procedure including scrub, preparation of the operative site, draping, and preparation of instruments and scrub personnel. The definition of clean technique for tonsillectomy and adenoidectomy differs from sterile technique as under:

(1) All scrub personnel were in regular scrub suits. No surgical scrubbing or preparation of either the operators or scrub personnel's hands or the operative site were undertaken. All scrub personnel wore sterile gloves and handled instruments only with gloves.

(2) All instruments were prepared in the usual sterile fashion up to the time of surgery.

(3) A sterile towel was placed on the Mayo stand but no other droping of any kind was used.

From the results, it seems apparent that the use of surgically clean technique for tonsillectomy and adenoidectomy as opposed to the classic sterile technique, does not significantly change the incidence of postoperative infections or other complications relating to the surgery. Clean technique is, therefore, at least as safe for tonsillectomy and adenoidectomy as the classic surgical technique. With some modifications, such as preparation of the operative site, it is believed that the clean technique, may also be applied to other selective procedures such as laryngoscopy and tracheoscop hemorrhoidectomy and other lo procedures in and around the rect and the anus. Considerable savin in cost and man hours spent could achieved by employing surgically clea rather than sterile technique.

BOOKS RECEIVED

"Basic Tabulation List with Alphabetical Index"—Pp. 331; M/s World Health Organization, 1211, Geneva, 27, Switzerland. [Price : Sw. Fr. 15/-

"Vitreous—Its Importance and Surgery"—By Prof. J.M. Pahwa, M.B., B.S., D.O.Z.O., (Vienna), M.S., F.I.C.S., F.A.C.S., F.A.M.S., Pp. 164; M/s. Mediscope, 9-A, Sir C. Madhavan Nair Road, Nungambakkam, Madras 600 034. [Price : Rs. 15/-

"Doctors Desk Reference—1979"—By Dr. Kishan N. Modi, M.D., M/s. Enar Advertisers Pvt. Ltd., 14, Nair Mahal, 108 B-Senapati Bapat Marg, Mahim, Bombay-400 016. [Price : Rs. 80/-

"Dictionary of psychiatry"—By Dr. Harold Thakurdas, M.S.,B.SC., B.S., D.P.M., and Dr. Lyn Thakurdas, B.A., (Hons), Oxon., Pp. 118; M/s. B. I. Publications. Promotion Department, 359. Dr. D N. Road Bombay-400 023. [Price : £ 1·95 or Rs. 34-35/-

"Child Psychiatry for Students"—By Dr. Frederick H. Stone. M.B., Ch.B., F.R.C.P., and Dr. Cyrille Koupernik, M.D., Pp. 122; M/s. B. I. Publications, Promotion Department, 359, Dr. D. N. Road, Bombay-400 023. [Price : £ 2·25 or Rs. 39-60/-

"The MRCGP Examination (MTP)"—By Dr. A. J. Moulds, Lt. Col. T. A. Bouchier Hayers and Colonel K. H. M. Young, Pp. 140; M/s. B. I. Publications, Bombay 23. [Price : £ 4·95 or Rs. 87.12/-

"Psychology as applied to Nursing"—(Seventh Edition) By Dr. Andrew McGhie, Pp. 320; M/s. B. I. Publications, Bombay 23. [Price : £ 3·25 or Rs. 57.20/-

"The Treatment of Hypertension (MTP)"—By Dr. E. D. Freis, Pp. 176; M/s. B. I. Publications, Bombay 23. [Price : £ 8·95 or Rs. 157.52/-

"Cimetidine—The Westminster Hospital Symposium—1978"—By Dr. Christopher Wastell, M.S., F.R.C.S., and Dr. Peter Lance, M.A., M.B., M.R.C.P., Pp. 322; M/s. B. I. Publications, Bombay 23 [Price : £ 12·00 or Rs. 211-20/-

"A Laboratory Manual for Rural Tropical Hospitals"—By Dr. Monica Cheesbrough, FINIS and Dr. John McArthur, M.R.C.S., L.R.C.P. Dip. R.M.S., F.C.I.A.D., Pp. 236; M/s. B. I. Publications, Bombay 23. [Price : £ 1·50 or Rs. 26-40/-

"Evaluation of certain food additives a contaminants"—Pp. 39; M/s. World Heal Organization, 1211, Geneva, 27, Switze land. [Price : Sw. fr. 5

"International Classification of Procedu in Medicine"—Volume 2, M/s. Wor Health Organization, 1211, Geneva, Switzerland. [Price : Sw. fr. 15

"Mental disorders—Glossary and guide their classification in accordance wi the Ninth Revision of ihe Internation Classification of Diseases"—Pp. 96; M World Health Organization, 1211, Genev 27, Switzerland. Price : Sw. fr. 12

"The application of advances in neur sciences for the control of neurologic disorders" M/s. World Health Organiza tion" 1211, Geneva 27, Switzerland. [Price : Sw. fr. 9

"Pain-Its nature, analysis and treatmen—By Dr. Michael R. Bond, M.D., Ph M.R.C.P., F.R.C.S., (Edin). M R C P., Pp 20 M/s. B. I. Publications, Promotio Department, 359, Dr. D. N. Road Bo bay-400 023. [Price : £ 3 95 or Rs. 68.5

"Elements of Medical Genetics"—(Fif Edition) Dr. Alan E. H. Emery, M.D Ph.D., F.R.C.P, (E), F.R.S. (E), Pp. 25 M/s. B. I. Publications, Bombay 23. Price : £ 3·95 or Rs 68 55

"Aid to post graduate Medicine"—(Thi Edition) By Dr. J. L. Burton, M.D, B Sc F.R.C.P., Pp. 216; M/s. B. I Publicatio Bombay 23. [Price : £ 2·50 or Rs. 4

"Bentley's Textbook of Pharmaceutics"—(BT EIBS) By Dr E. A. Rawlins, M.Sc Ph.D., F.P.S., Pp. 736; M/s. B. I. Publi cations, Bombay 23. [Plice : £ 3.50 or Rs. 61.60

Immunodeficiency"—M/s. World Healt Organisation, 1211, Geneva 27, Switze land. [Price : Sw. fr. 7

"Tuberculosis—Case Finding and Chem therapy"—(Questions and Answers) B Mr. K. Thomas, Pp 240; M/s Wor Health Organization, 1211, Geneva Switzerland. [Price : Sw. fr 3

"Cancer Statistics"—Pp. 47; M/s. Wor Health Organization, 12, Geneva Switzerland [Price : Sw. fr.

"Primary Health Care"—Pp. 79; M World Health Organization, 1211, Gene 27, Switzerland. [Price : Sw. fr.

NEWS AND NOTES

Ayurvedic Research Seminar

The Gujarat Ayurved University, Jamnagar will hold a 'Seminar on Ayurvedic Research' between 4—7 November, 1979 at Jamnagar.

The proposed Seminar will cover a wide range of subjects relating to Ayurvedic research.

For details please write to Dr. S. K. Mishra, organising Secretary, Seminar on Ayurvedic Research. Institute for Post-graduate Teaching and Research, Gujarat Ayurved University, Jamnagar-361 001.

Sir Robert Grant—Celebration of 200th Birth Anniversary

Dr. N. G. Talwalkar, writes :—We are celebrating the 200th birth anniversary of Sir Robert Grant in January, 1980. Sir Robert Grant after whom the Grant Medical College is named was largely responsible for establishing the medical college. Soon after taking charge of the post as Governor of Bombay he got busy putting his idea into practice. However he did not live long enough to see the College being started, which was unanimously decided to be named after him.

We, who feel proud to be products of this College have decided to celebrate his 200th birth anniversary in a fitting manner and as a preliminary measure are preparing a list of all living past GMCITEs, so that we can invite them for this function. Through your columns I would like to approach all GMCITEs, wherever they may be and request them to send me their names and addresses at the following address.

N. G. Talwalkar, Hon. Secretary,
153, B. Hindoo Colony, Bombay-400 019.

REVIEWS OF BOOKS

"A Laboratory Manual for Rural Tropical Hospitals"— By Dr. MONICA CHEESBROUGH, F.I.M.L.S. and Dr. JOHN MCARTHUR, M.B., B.S., L.R.C.P., Dpi. R.M.S., F.S.I.A.D., Pp. 236; Published by : M/s. B.I. Publications, Promotion Department, 359, Dr. D.N. Road, Bombay.400023.
[Price : £ 1·50 or Rs. 24-30.

In carrying medical care to the rural areas, one of the important hurdles is the non-availability of paramedical staff trained in nursing and laboratory work. Very often local educated persons have to be recruited and trained for these jobs. In such situations and in private nursing homes, this book will be of great use in imparting to the students an elementary knowledge of laboratory techniques.

Starting with a description of the apparatus required to set up a laboratory, the book goes on to describe details of microscopy, particularly the Mc. Arthur's type of microscope, which may be very ideal for rural based laboratories, and the advantages of this apparatus over the conventional microscope is clearly given. The various laboratory investigations of blood, stool, urine and other fluids have been adequately described. Two separate chapters have been devoted to the description of bacteriology and parasitology. The chapter on blood transfusion though useful may prove too much for this class of students since it is puzzling even to the advanced students of hæmatology.

The book is replete with colour plates, line drawings (etc) which makes this book extremely interesting and useful to its readers.

DR. AMUDHAMOZHI.

"Sexually Transmitted Diseases"— By Dr. C.B.S. Schofield, M.D., F.R.C.P., Pp. 260 ; Published by : M/s. B.I. Publications, Promotion Department, 359, Dr. D.N. Road, Bombay-400 023
[Price : £ 3·25 or Rs. 57-20.

Sexually transmitted diseases (S.T.D) being the commoner of communicable disease, claims more importance from the sociological angle in view of the fact that the number of patients treated for the condition is increasing every year. Lack of sex education and ignorance of personal hygiene may be the important factors responsible for more persons contracting these diseases every year. Keeping these factors in view, the author has devoted the initial pages to discuss the public health hazards of this group of diseases and ways to tackle the same.

The first two chapters describe the anatomy of the genital tracts and details of clinical examination. Next the author has described specific diseases like syphilis, gonorrhea, trichomoniasis followed by sections on non-specific condition like urethritis, balanitis, cervicitis, etc. Both syphilis and gonorrhea have been dealt with in an elab rate manner, with special emphasis, altered course of the two diseases a effects of drug resistance on treatme The last two chapters are devoted the description of S.T.Ds of the trop cal countries like chancroid, lymph granuloma venereum, filariasis, cut neous leishmaniasis, etc.

This book would be of great help general practitioners whose daily wor brings to them a large number of su cases.

Dr. R. RAVINATHA

CORRESPONDENCE

To the Editor, ANTISEPTIC, Madras

Query

Sir,

I would be much pleased if you could kindly enlighten me on the following in your valuable columns.

(1) What is the ætiology of asthmatic bronchitis and how do you differentiate it from bronchial asthma when the family history is not helpful.

(2) Does primary complex have any role (ætiologically) in asthmatic bronchitis ?

(3) Why do almost all babies (suffering from asthmatic bronchitis) get back the attacks again and again in spite of having been given deworming therapy for roundworms and even after a full course of broadspectum antibiotics ?

(4) Will principal eosinophilics present as asthmatic bronchitis ?

(5) What are the other investigations to be done in a case of asthmatic bronchitis apart from TC, DC, ESR, motion test and skiagram of the chest ?

38, K. V. North Street,
Kumbakonam,
Tanjore Dist.

K. BALASUBRAMANIAM

Answer

1. Asthmatic bronchitis or bronchial asthma, both should be considered as synonyms rather than separate entities. In young children, especially those under 3—4 years of age, repeat episodes of wheezing are often observ and provoked by respiratory infectio In these children, the allergy is referr to as "intrinsic form". In certa children with the so called "extrinsi or allergic asthma it is clear th attacks occur following exposure environmental factors such as dus cotton, jute, etc. certain food items a parasitic infestation. There is no diffe ence in general immunologic activit between the intrinsic and extrinsic form Children who get wheezing episod following respiratory infections gen rally outgrow from these attacks b the age of 4—5 years. These episod of wheezing are often referred to a asthmatic bronchitis. If a child get a wheezing episode unrelated to resp ratory infection, one can strongly su pect that it may be related to allerg asthma or extrinsic asthma.

2. Wheezing attacks are at time seen in children with progressive pr mary complex. Such attacks are ofte due either to endobronchial tuberculos or to hilar glands pressing upon th bronchus, leading to wheezing.

3. Parasitic infestation may be contributory factor for wheezing ep sodes. There is a high incidence parasitic infestation in children wi asthmatic bronchitis. The parasit infestation may initiate or precipita an allergic process resulting in wheezi attacks. Proper deworming treatme will at least increase the period

relief between episodes. Even with adequate deworming treatment, a child still may get attacks of wheezing following respiratory infection or after exposure to other allergic components.

4. Tropical eosiniphilia, can present like asthmatic bronchitis with wheezing symptoms. But because of frequent association of parasitic infestation in children with asthmatic attacks, there is a rise in eosinophilic count in the majority of children. In fact, any rise in eosinophilic count, must alert the physician regarding the presence of parastic infestation in children.

5. Routine investigations for any child with wheezing episodes should include total and differential count, Mx test, stool examination and X-ray chest. ESR is generally not necessary.

867, Poonamallee
High Road,
Madras-600010

Dr. B. R. SANTHANAKRISHNAN, A.B. (Ped).

Sir,

Ref : Correspondence from Dr. Natarajan—Pages 373 and 374 —June 1979 issue.

I am grateful to the Antiseptic and Dr. Natarajan for the clarifications given.

However, at a certain point we seem to have been talking at cross purposes. When I wrote about prophylactic immunisation or post exposure treatment I was refering, to canines. Dr. Natarajan's phraseology makes it difficult to disern whether he means human patients, or, canines. But I totally agree that even in dogs improper treatment has no place.

Where does this leave us ? We have to see that every stray dog is destroyed and every owned pet is immunised. The difficulty is as our local executive officer points out, immunisation cannot be made a precondition to licensing of dogs under the existing rules. The Government, I am sure, will modify this rule if the absolute necessity of modification is pointed out by the medical profession.

But there is a bright side to this in that a prophylactic human vaccine is available. Dr. Natarajan I am sure must be aware of it, though I came to know of it from Mr. Harry Miller, F.Z.S. for the first time. He has been kind enough to take the trouble of collecting the information and sending it to me.

The vaccine is inactivated human rabies virus cultivated on human diploid cells.

Mr. Harry Miller has lamented as to why we depend on foreigners for solving our problems instead of doing it ourselves. The annoyance in his mood is obvious and I think fully justified.

We have the knowhow or can obtain it. We don't lack men of merit or money. So may I request Dr. Natarajan and other colleagues in this field to take it up as an urgent challenge and make the vaccine available to the poorest of poor in this country.

Kalyani Hospital,
Sattankulam,
Tirunelveli Dist.

Dr. K. C. Pillai,
M.B., B.S.

Question

Sir,

(*a*) Is there any new advance in the treatment of progressive muscular dystrophy with pseudo-muscular hypertrophy (Duchenne type)? If so, kindly enlighten me. If there is no treatment available, how should we manage such a case.

(*b*) In patients suffering from the disease, is there a chance of the off spring getting the disease ? If so can anything be done to prevent the child from inheriting the disease.

(*c*) In a patient of the above type getting constant pain in the hypertrophied muscles aggravated by the slightest exertion, is it rational to prescribe phenylbutazone? If not, what is the drug of choice ?

(*d*) Does muscular dystrophy respond to anabolic steroids like dianabol or durabolin?

Old Bazaar, PO (Bhainsa, Tq.
Mudhole, Dt. Adilabad,
A. P. Pin-504103.

Dr. BHA
RAM

Answer

1. Many pharmacological preparations have been tried empirically but none has been shown to have any effect on the disease process of child-

hood muscular dystrophy including Duchenne type. Management is aimed at maintenance of the child's general condition and mobility as long as possible. Physical exercise should be encouraged but very strenuous exercise is to be avoided. Inactivity and prolonged bed rest may hasten muscle atrophy. From the start, parents should be shown how to prevent contractures by regular passive stretching of muscles especially the calves.

2. Since children affected by such disease are likely to have a progressive course, the chances of these children getting married are rather remote. Where there is a pattern of sexlinked inheritence. male siblings of an affected child have a 50 percent chance of being afflicted, the sisters have a 50 percent chance of being carriers. There is no question of any prophylatic treatment to prevent the development of the disease either during foetal life or during infancy.

3. As the name suggests the disease is progressive and cannot be arrested by any specific treatment.

4. There is no specific approach one can suggest to relieve the muscle pain. if any. Strenous exercises must be avoided. Analgesics may be given to relieve pain if it benefits.

5. Anabolic steroids have no place in the management of progressive muscular dystrophy.

867, Poonamallee
High Road,
Madras-600 010.

Dr. B R. Santhana-
krishnan, A.B., (Ped)

Sir,

Streptomycin in tuberculosis :—This has reference to the report (The Antiseptic of June 1979) of the 'open' case of pulmonary tuberculosis in which a "massive" dose of "over 35 g. of strepto mycin in interrupted courses, 10g. in each course" was found to be "ineffective". The writer commented that "one possible reason for the ineffectiveness of streptomycin appears to be the intracellular location of many of the infecting bacilli" and that "it is highly probable that streptomycin resistance had developed in this case".

It is elementary knowledge tha confirmed 'open' case of pulmona tuberculosis should not be treated wi streptomycin alone. It has long be established beyond any shade of dou that the organisms would soon becom resistant to streptomycin and that t drug would become ineffective, if t drug is given alone.

Secondly, it is universally recognis that tubercle bacilli may be prese both inside and outside the cel and that streptomycin acts almo exclusively on extracellular bacil When rapidly multiplying, the bacil emerge out of the phagocytes a become extracellular and thus suscep ble to streptomycin. The indole bacilli remain mostly intracellular a become invincible to streptomycin.

Thirdly, the total dose of strept mycin administered in the case repo ted was not massive, and the irregula inadequate, and unscientific therap with streptomycin alone does n permit one to draw any valid conclusi as to the effectiveness or otherwi of streptomycin.

In this case which ended fatally, the professionals of modern scienti medicine were responsible for t monotherapy with streptomycin, we it is a sad commentary and a blot o the profession.

Perundurai Sanatorium,
638 053
Coimbatore District

Dr. T. Rama
Prasad

Sir,

"With Ref. to the query of Dr. Surendra C. Wodeyar. of Karnataka, regarding children urine becoming white on dring, in Vol. 76, No. 5, May, 1979."–

I would like to mention about Homoeopathic medicine which is oft used successfully for this problem practice. The medicine *"Phosphor Acid"* in different strengths is use But lower strengths like 3 x or 6 x et has been found to give better cu tive results.

Readers if interested, may use t drug and benefit the little ones.

Purani Mandi,
Jammu Tawi-
180 001.

Dr. Arun Kumar,
D.H.M.S. (DLI) P.G.T. Beh
(Bombay).

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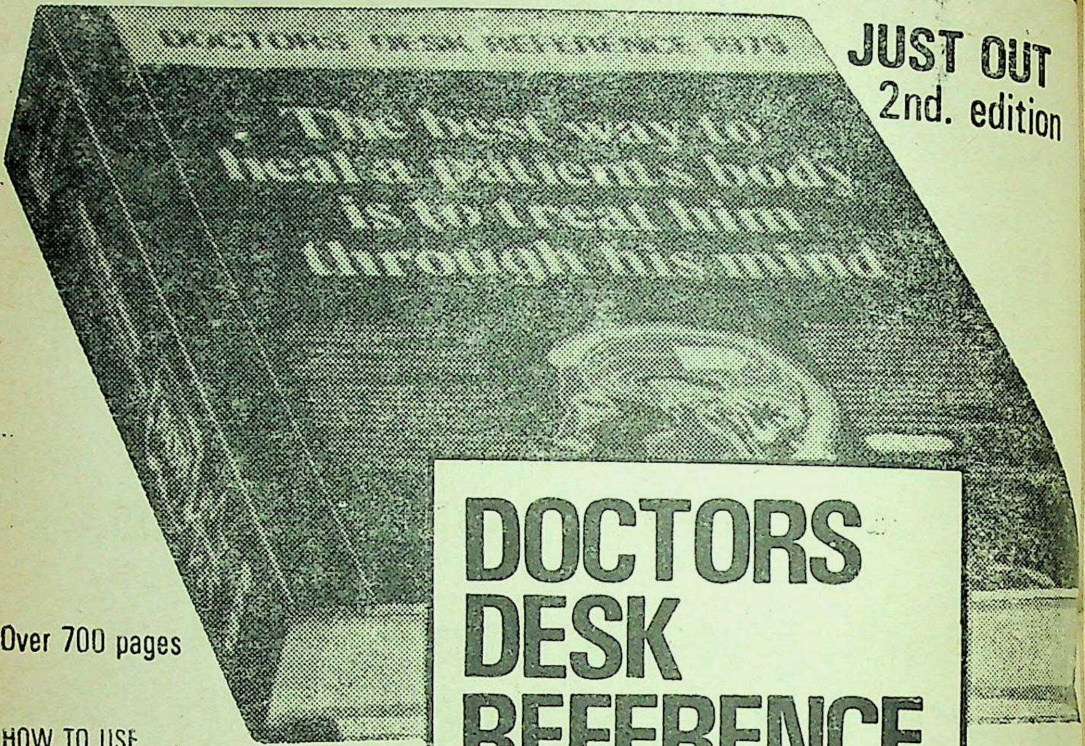
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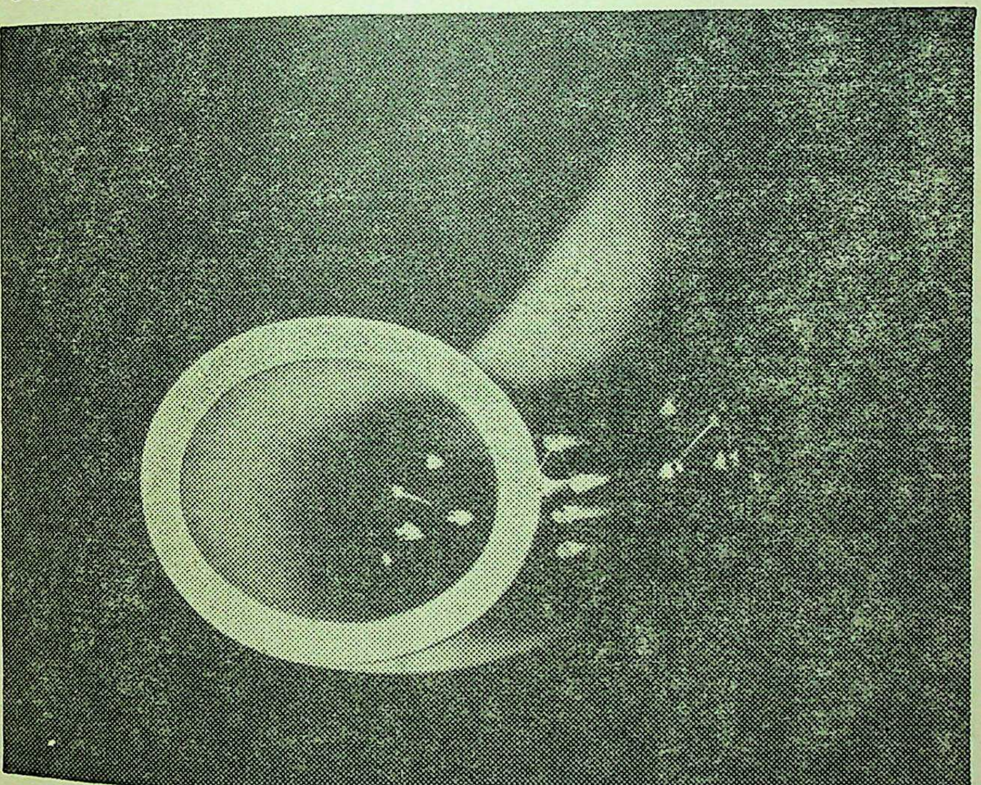

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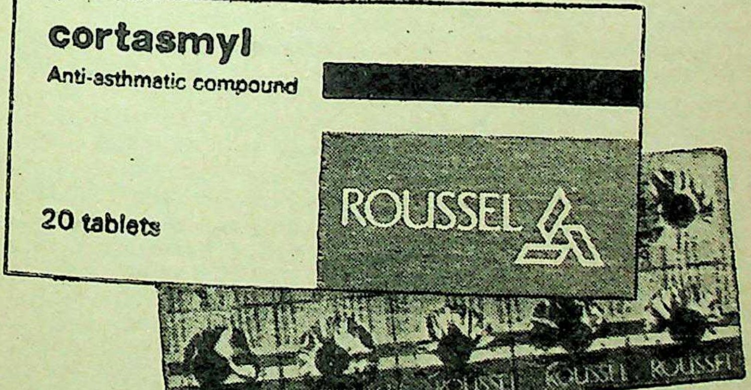
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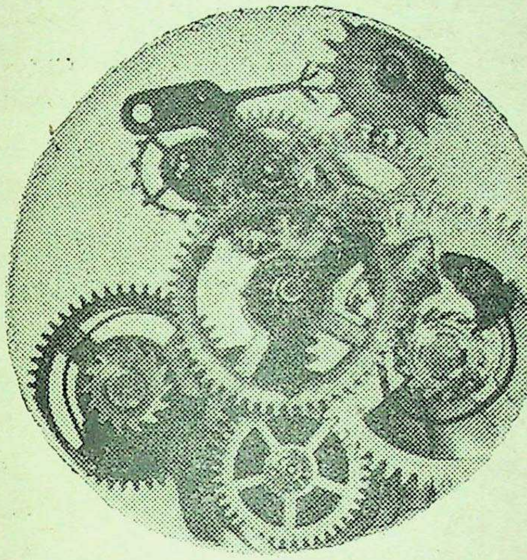


Duoluton

50 mcg ethinyl oestradiol + 0.5 mg norgestrel

the advanced cycle regulator for efficient treatment of gynaecological disorders

Extensive clinical trials have shown that Duoluton not only suppresses ovulation, but also exhibits **virtually perfect cycle control.** It is, therefore, particularly suitable for regulation of the cycle and ovulation-suppression therapy. In addition, Duoluton has the following advantages:

- Proven to be highly effective
- Employs low doses of both progestogen and oestrogen
- Correspondingly excellent tolerance
- Simple administration : one tablet per day with an easy-to-follow rhythm of 3 weeks' tablet-taking, 1 week's rest

Presentation :
Tubes of 21 tablets

For detailed information on mode of action, contra-indications, dosage scheme and particular recommendations, please consult the scientific literature or packing slip.

Schering

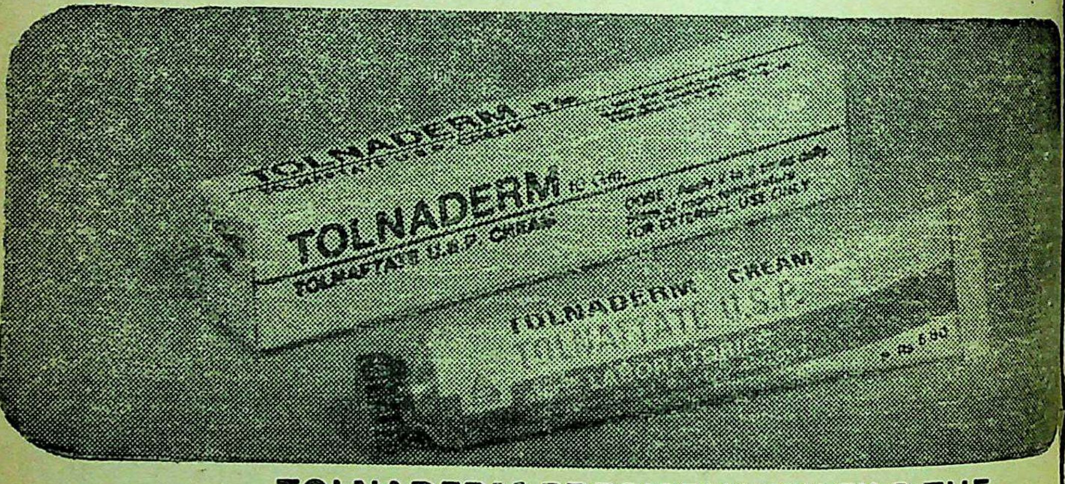
Schering Division,
German Remedies Ltd.
P. O. Box 6570, Bombay 400 018 India

3 BROTHERS

PRESENTING AN ELEGANT
ANTIFUNGAL FOR
UGLY DERMATOMYCOSES

TOLNADERM®

INDIA'S FIRST CREAM APPLICATION OF TOLNAFTATE



TOLNADERM PRECISELY FULFILS THE DERMATOLOGICAL CRITERIA OF AN IDEAL TOPICAL ANTIFUNGAL IN

** HIGHLY EFFECTIVE HOMOGENEOUS TOPICAL CREAM FOR TINEA INFECTION.
** IS ODOURLESS, NON-GREASY AND DOES NOT STAIN OR DISCOLOUR SKIN, HAIR, NAILS OR CLOTHING.
** NO IRRITATION ON SENSITIZATION.
** MINIMISES LOSSES DURING APPLICATION COMPARED TO SOLUTION.
** REMAINS IN CONTACT WITH INFECTED LESION FOR LONGER TIME, EXPEDITING HEALING PROCESS.

INDICATED IN:
Superficial dermatomycoses caused by dermatophytes and MALESSEZIA FURFUR. TOLNADERM is particularly valuable in Ringworm of the glabrous skin but is ineffec in fungal infection of the nails or infections due to candida. The major indications are: Tinea pedis, Tinea cruris, Tinea corporis, Tin capitis, Tinea manuum and Tinea versicolor.

COMPOSITION & PACKING:
Available as 1% tolnaftate in a special fluid cream base in tubes of 10 gm.

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38, Suren Road Andheri
BOMBAY-400 093.

Promoted & Distributed by
STERKEM PHARMA CORPORATION
14, Khira Industrial Estate Santacru
BOMBAY-400 054.

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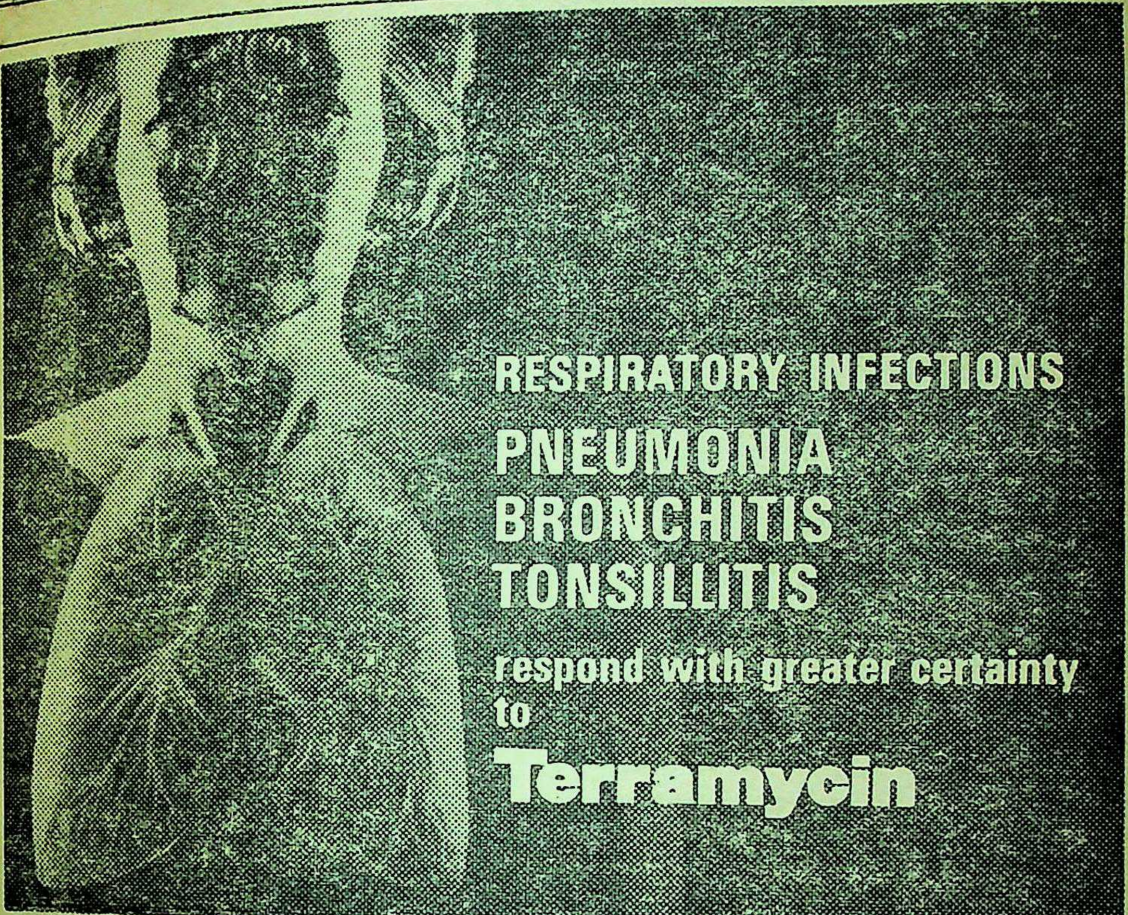
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Terramycin*

the original oxytetracycline

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PP.121.

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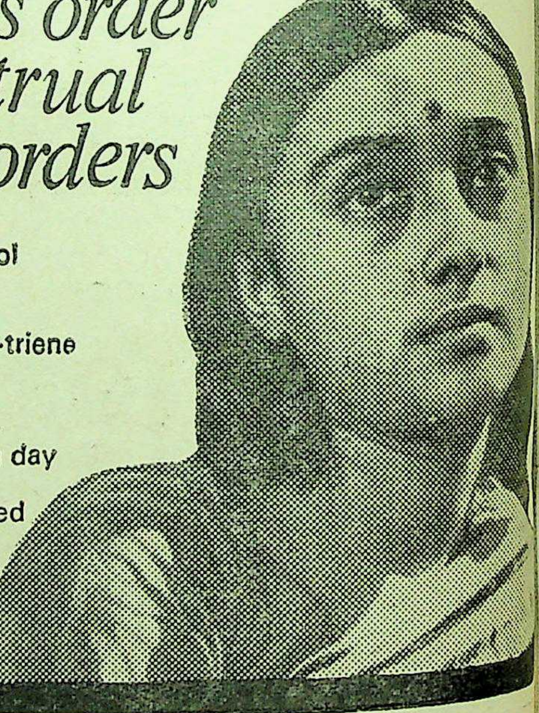
ORGALUTIN

brings order to menstrual disorders



Composition :

17α-ethynyloestr-4-en-17β-ol
B.P. 2.5 mg.
17 α- ethinyl-3 : 17-β-
dihydroxyestra-1 : 3 : 5 (10)-triene
I.P. 0.05 mg

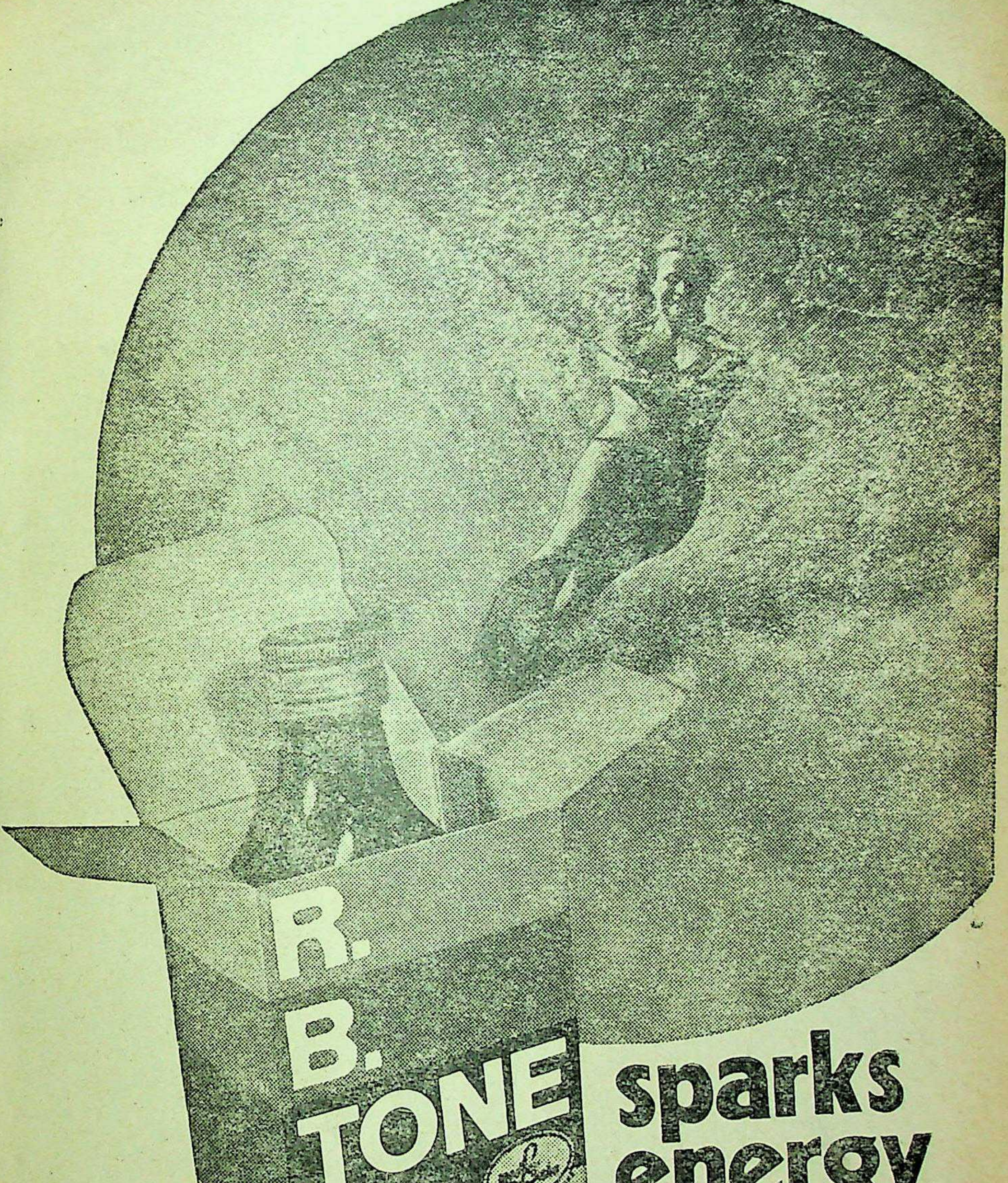
Dosage :

One tablet daily from the 5th day of cycle for 20 days. Treatment is normally repeated for at least 3-4 cycles.

Presentation

Boxes of 5x20 tablets.

For detailed information please write to :
Medical Services Department.
Organon
Organon (India) Limited
Himalaya House, 38 Chowringhee Road, Calcutta 700071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B.
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SYRUP
225 ml
a Tonic
for
Red Blood
corpuscles
and
general
restorative
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sparks energy

FORMULA:
Each 10 ml.(approx. 2 teaspoonful) contains:
Proteolysed Liver Extract (300 mg. on dry base) derived from 1.8 g. of fresh liver, having Vitamin B_{12} activity equivalent to 0.6 mcg. of cyanocobalamin

Ferrous Gluconate	I.P.	200	mg.
Sodium Ascorbate	...	12.5	mg.
Vitamin B_{12}	I.P.	10	mcg.
Vitamin B_1	I.P.	3	mg.
Vitamin B_2	I.P.	1	mg.
Panthenol	...	1	mg.
Vitamin B_6	I.P	0.5	mg.
Niacinamide	I.P.	5	mg.
Folic Acid	I.P.	1	mg.
Soln. of Sodium Glycerophosphate	B.P.C.	200	mg.
Soln. of Potassium Glycerophosphate	B.P.C.	200	mg.
Calcium Glycerophosphate	B.P.C.	100	mg.
Caffeine	I.P.	50	mg.
Flavoured Syrupy base	...		q.s.

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daflon®

basic treatment of venous disease
protection against vascular risk

specific oral therapy for
haemorroids

daflon®

provides relief of symptoms
- anal discomfort
- tenesmus
- burning sensation
- shooting pains
- oozing
- bleeding

Composition:
Each capsule contains 0.375 g.
Citrus flavonoid extracts of Rutaceae
equivalent to 150 mg. diosmine.

Indications:
1. Treatment of haemorrhoids long term treatment treatment of acute attacks with a high dosage.
2. Vascular protection in patients with hypertension arteriosclerosis, diabetes, in elderly persons, because of the capillary fragility.
3. Circulatory disorders in women heavy limbs, varicose veins, sequelae of phlebitis.

Dosage:
In acute haemorrhoid attacks
9 to 12 capsules daily, for 3 days
(3 capsules 3 or 4 times per day).
In Chronic haemorrhoid 2 capsules, twice daily during meals in long term treatment.
In general and in different indications,
2 capsules twice daily during meals.
The dose can be increased to
2 capsules, 3 times per day.

Presentation:
Bottle of 30 capsules.

For further information please write to

WB **Walter Bushnell
Private Limited**
Steelcrete House, 7th floor
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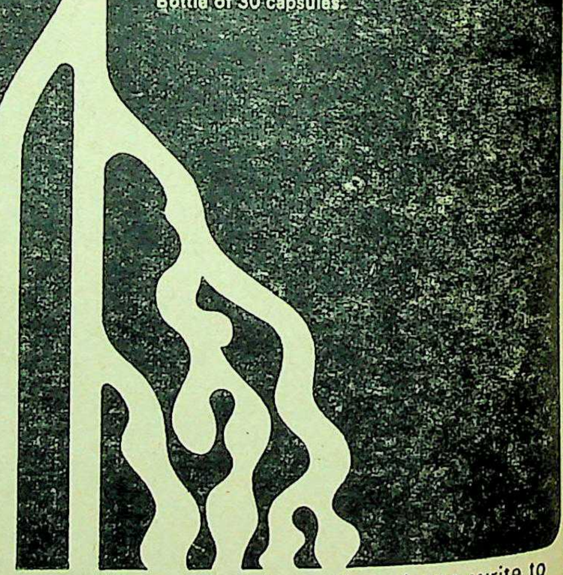
Bombay-400020



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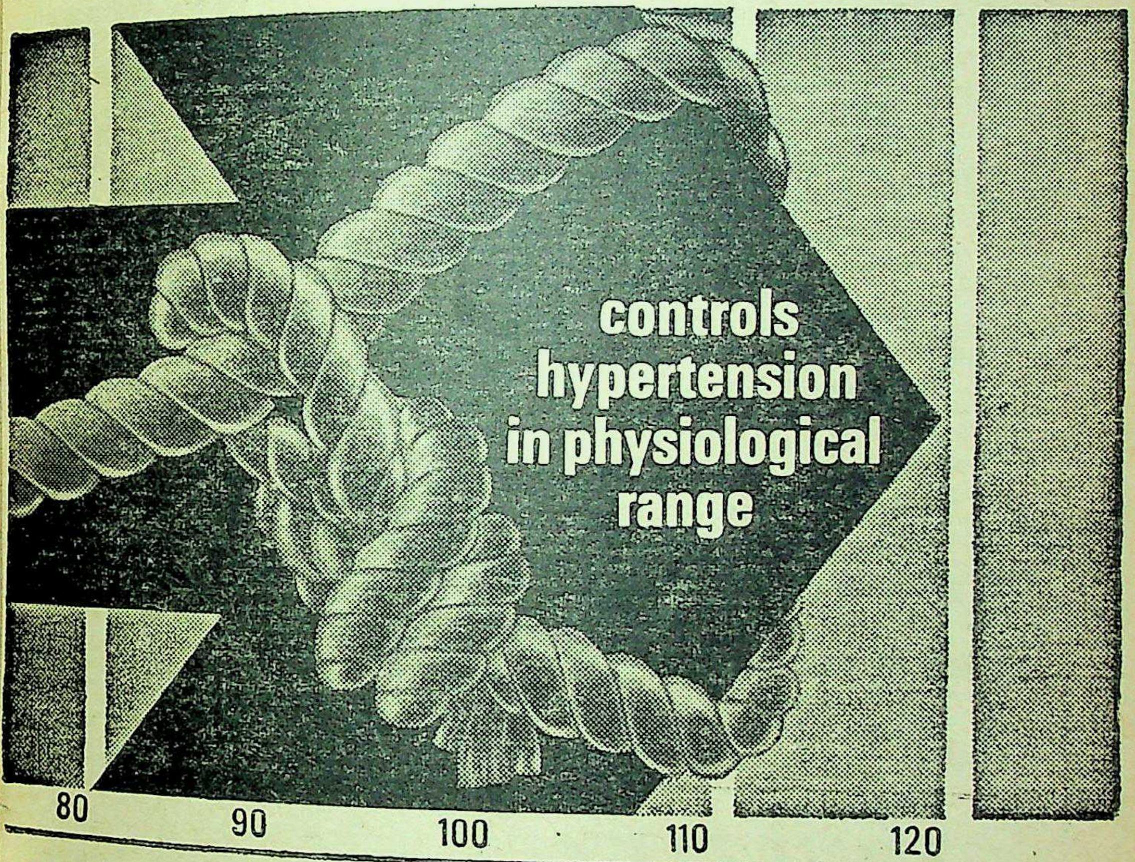
L-METHYLDOPA TABLETS


controls
hypertension
in physiological
range
80
90
100
110
120

Lowers blood pressure effectively without further compromising existing function of the Kidneys, heart or brain

THEMIS CHEMICALS LIMITED
PLOT. NO. 69.
G.I.D.C. INDUSTRIAL ESTATE
VAPI GUJARAT STATE.

INDICATIONS:
All grades of hypertension mild, moderate or severe

DOSAGE:
DOPAGYT 2 to 4 tablets a day in divided dosage as per the requirement of the patient and as desired by the physician for the normalization of pressure

PRESENTATION:
250 mg. tablets
In packing of 10 x 10 tablets strips

Hypertonic Saline for M.T.P. Now available in....

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PLASTIC DISPOSABLE DEVICE

The advantages are obvious:

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- Sterile, Pyrogen-free & ready for use
- Totally aseptic closed circuit system when infused with Type E sets (separately available)

Contents:
Sodium Chloride I.P. 20% — 200 ml.

Manufactured b
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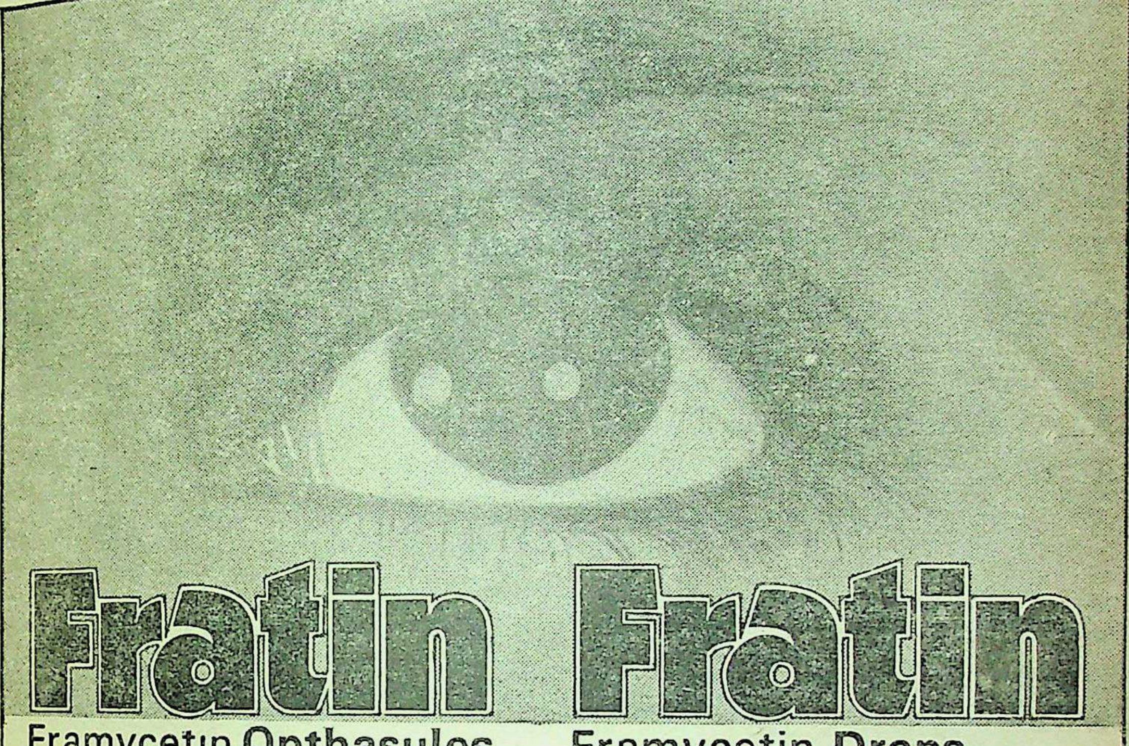
BOMBAY 400 01



Fratin Fratin

Framycetin Opthasules

SUSPENSION IN OILY BASE makes Fratin opthasules, a drug of choice when sustained response is required.

FRATIN opthasules ensure freedom from cross contamination. FRATIN opthasules alone guarantee contamination free drug to the already infected eye.

Framycetin Drops

WATER SOLUBILITY of Framycetin Sulphate unlike chloramphenicol etc. makes Fratin Eye Drops, a drug of choice when prompt response is required.

Fratin

Knocks out a vide range of Gram-positive and Gram-negative organisms most commonly encountered in eye infections such as Staphylococci, Corynebacterium Diphtheriae. Streptococci, Pseudomonas, Escherichia Coli, Proteus Vulgaris.

Being of no systemic use, Fratin Eye Drops and Fratin Opthasules develop no resistance strains eg. Staphylococcus aureus resistant to other antibiotics remain sensitive to Fratin.

INDICATIONS:
Fratin is indicated in treatment of conjunctivitis, Blepharitis, Styes, Corneal ulcers, Corneal injuries, and Eye lid burns. It is also used as Prophylactic in pre and post operative occular surgery.

DOSAGE:
Fratin Eye Drops are recommended for quick response and are more suited for day time use. One to two drops every 2 hours interval for 2 to 3 days; reducing to 3 to 4 times a day as condition improves.
Fratin Opthasules are recommended for sustained release effect.

Two to three opthasules daily if used alone, otherwise, once at bed time if Fratin Drops are used during day time.

PRESENTATION:
Vial of 20 Opthasules— each containing Framycetin Sulphate B.P. 1.25 mg.

Vial of 5 ml— each ml. containing Framycetin B.P. 5 mg.

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STERFIL **sterfil** LABORATORIES
38, Suren Road, Bombay-400 093.

PRESTIGESIC TABLETS

A PRESTIGE PRODUCT

FOR ALL TYPES OF INFLAMMATORY PAINS

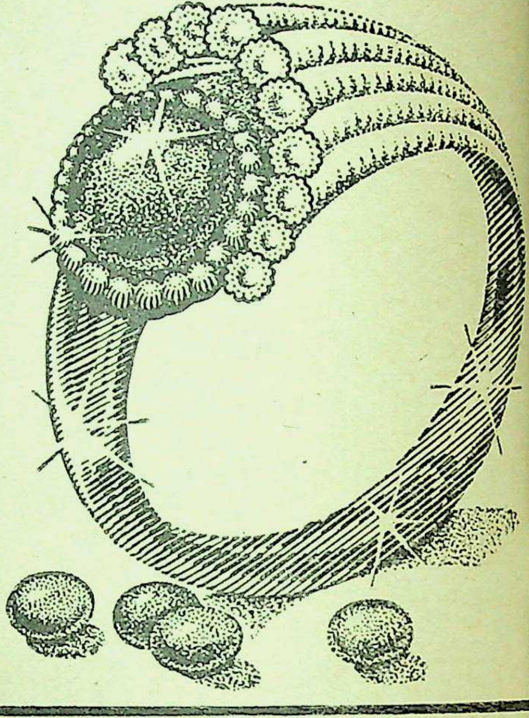
COMPOSITION:

Each pink coloured sugar coated tablet contains:

Oxyphenbutazone ..... 100 mg
Acetaminophen .... 325 mg
Vitamin B_1 .... 25 mg
Vitamin B_6 .... 15 mg
Vitamin B_{12} .... 25 mcg
Diazepam .... 2.5 mg

Colour: Erythrosine

PRESENTATION:
A box of 10x10 tablets strips.



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REFRACIN SKIN CREAM tubes of 15 gms. and 120 gms.
1% Framycetin Sulphate

REFRACIN-DEXA CREAM tube of 5 gms.
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0.1% Dexamethasone Acetate

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0.5% Framycetin in a clear aqueous solution
&

REFRACIN OPHTHALMIC OINTMENT tube of 3 gms.
0.5% Framycetin in absorbant vaseline base

REFRACIN-H EYE/EAR DROPS vial of 3 ml.
in a sterile aqueous suspension
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1% Hydrocortisone

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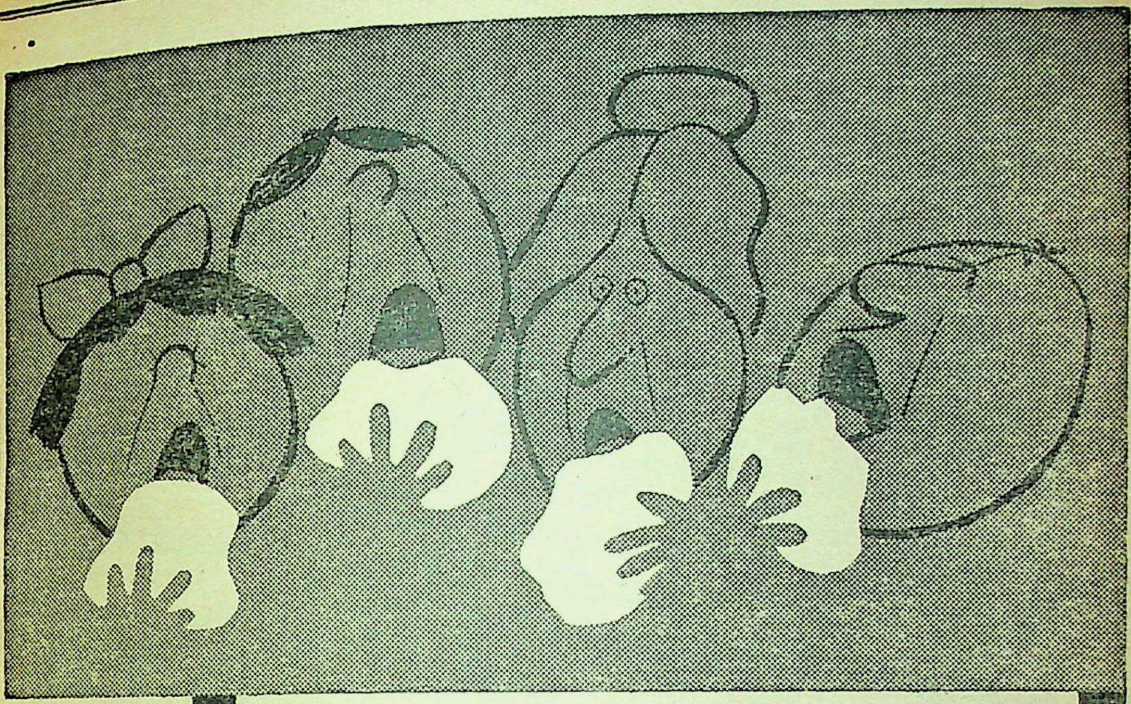

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Range for all age groups

LIQUID for Infants & Children
TABLETS for Adults

CINARYL is the perfect prescription to give symptomatic relief in common cold, hay fever, vasomotor rhinitis and sinusitis.

COMPOSITION:

■ **TABLETS**

Each tablet contains:

Diphenyl Pyraline Hydrochloride	2.5 mg.
Phenylephrine Hydrochloride	5.0 mg.
Paracetamol	0.4 Gm.

■ **LIQUID**

Each 4 ml. (teaspoonful) contains:

Diphenyl Pyraline Hydrochloride	2.5 mg.
Phenylephrine Hydrochloride	5.0 mg.
Paracetamol	0.125 Gm.

PRESENTATION:

■ **TABLETS**

10 x 10 tablets strips.

■ **LIQUID**

60 ml. and 450 ml. bottles.

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Stable, less toxic than other broad spectrum antibiotic.

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(Tetramisole Hydrochloride Tablets)
A powerful Anthelmintic in all types of worms.

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A unique drug of choice
in the treatment of tuberculasis.

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(Betamethasone Tablets)
For all types of allergy and skin diseases.

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Once a day oral antibiotic.

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For Regularising menstrual
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5-FLUOROURACIL CREAM U.S.P. 5%

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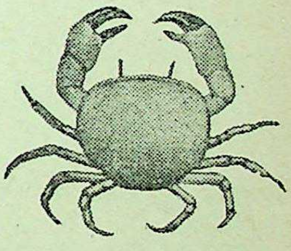

FFU offers

Selective destructive action on the precancerous cells of keratoses and on cancer cell of superficial basal and squamous cell of epitheliomas.

INDICATIONS:

- Basal Cell Carcinoma
- Epithelioma
- Leukoplakia
- Xeroderma pigmentosum
- Solar Keratoses.

Also

- Psoriasis, Viral warts
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Available as 15 Gm. Tube.

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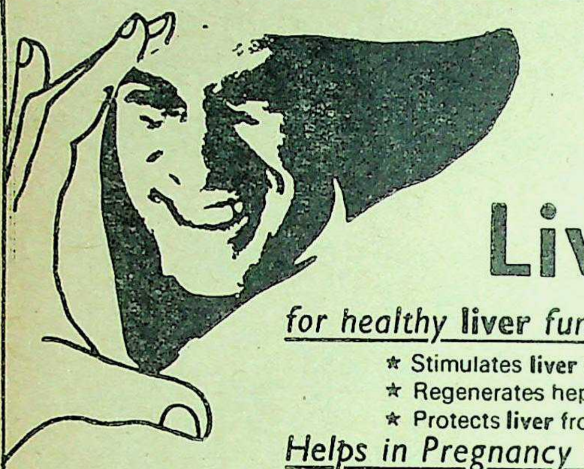

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Livotrit liquid & tablets

*for healthy **liver** functions*

- ★ Stimulates **liver** functions
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- ★ Protects **liver** from damage by varied toxic substances

Helps in Pregnancy to overcome morning sickness

- ★ Controls vomitting
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Helps in jaundice

- ★ Ensures early recovery
- ★ Minimizes convalescence period
- ★ Increases appetite

Helps overcome adverse effects of alcohol

Which cause lowering of serum albumin and enhanced retention of bromsulphathalein.

Livotrit *A new vista in treatment of **liver** diseases.*

Packagings:
Tablets : in packings of 50, 100 & 4
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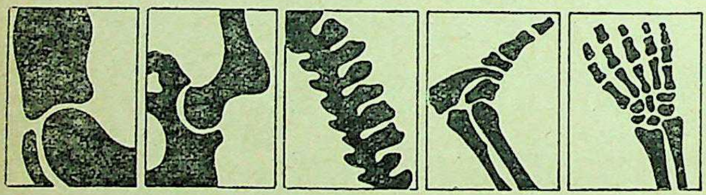
RHEUMAYOG offers dramatic relief

For prolonged therapy of Rheumatic disorders



Rheumayog gives satisfactory results by reducing swelling, inflammation and stiffness of joints.

COMPOSITION :

Each tablet contains:

Banga bhasma	5
Nag bhasma	5
Loha bhasma	5
Makshik bhasma	5
Mandur bhasma.	5
Abhrak bhasma	5
Rasa sindur	30
Yog Raj Guggula	30
Maha rasnadi quath (Solid extract)	235

MECHANISM OF ACTION :
The combination of Banga bhasma, Loha bhasma Makshik bhasma, Mandur and Abhrak bhasma effectiv acts as antiinflammatory and diuretic

RASA SINDUR :
acts as a diuretic and as a catalyst

YOG RAJ GUGGULA :
acts both as an analgesic and diure

DOSAGE :
1 to 2 tablets twice a day with milk.

PACKING : 75 Tablets.

Also now available
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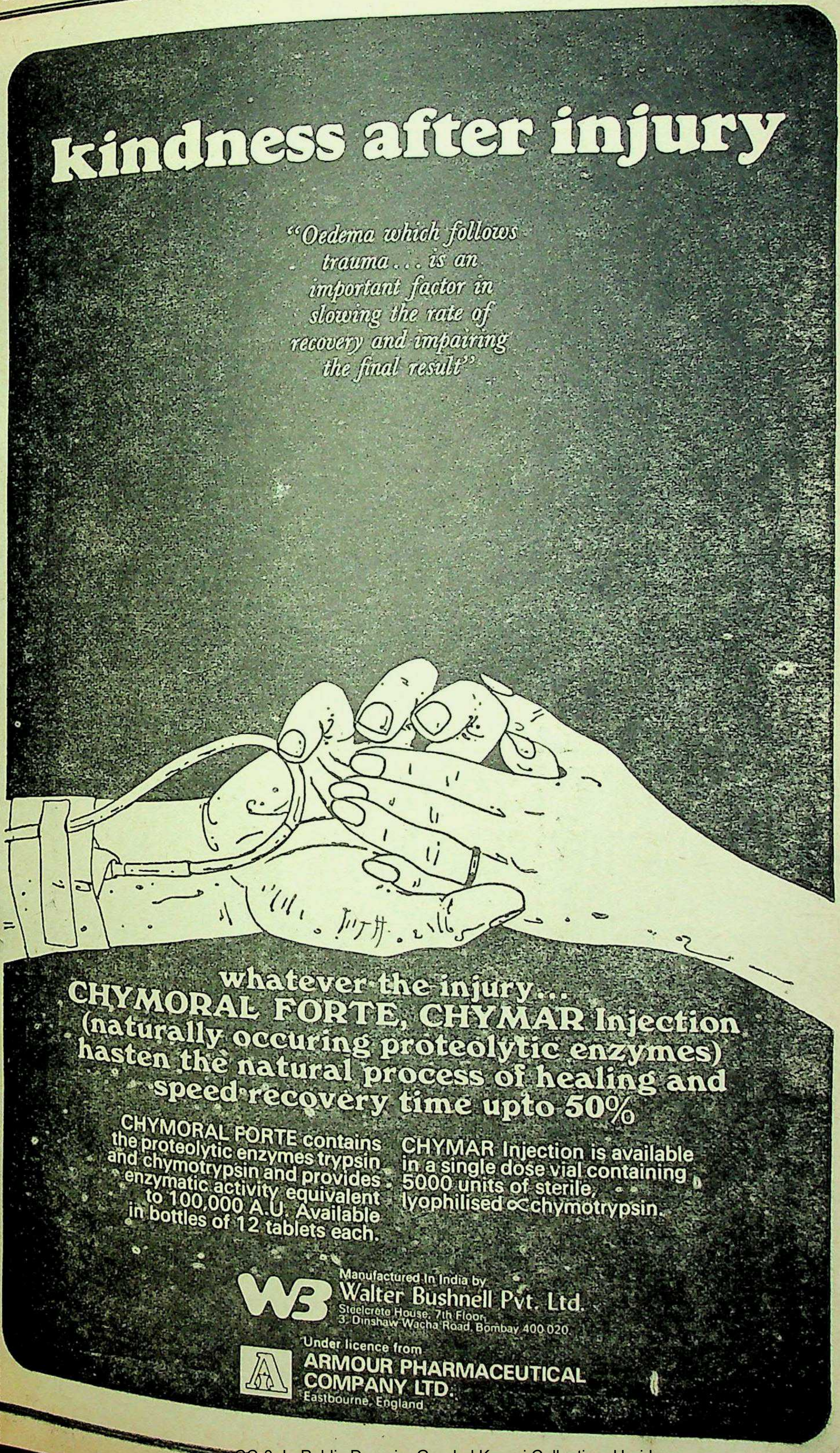

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CHYMORAL FORTE, CHYMAR Injection
(naturally occuring proteolytic enzymes)
hasten the natural process of healing and speed recovery time upto 50%**

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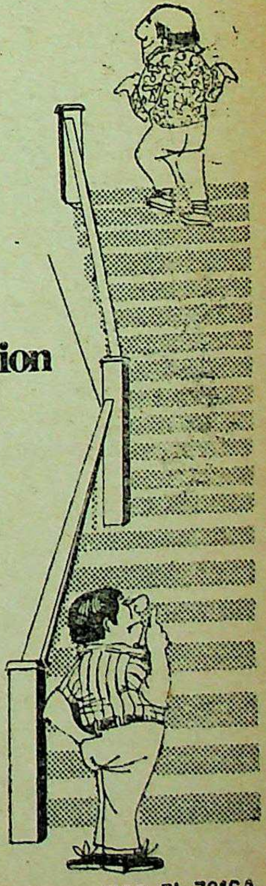

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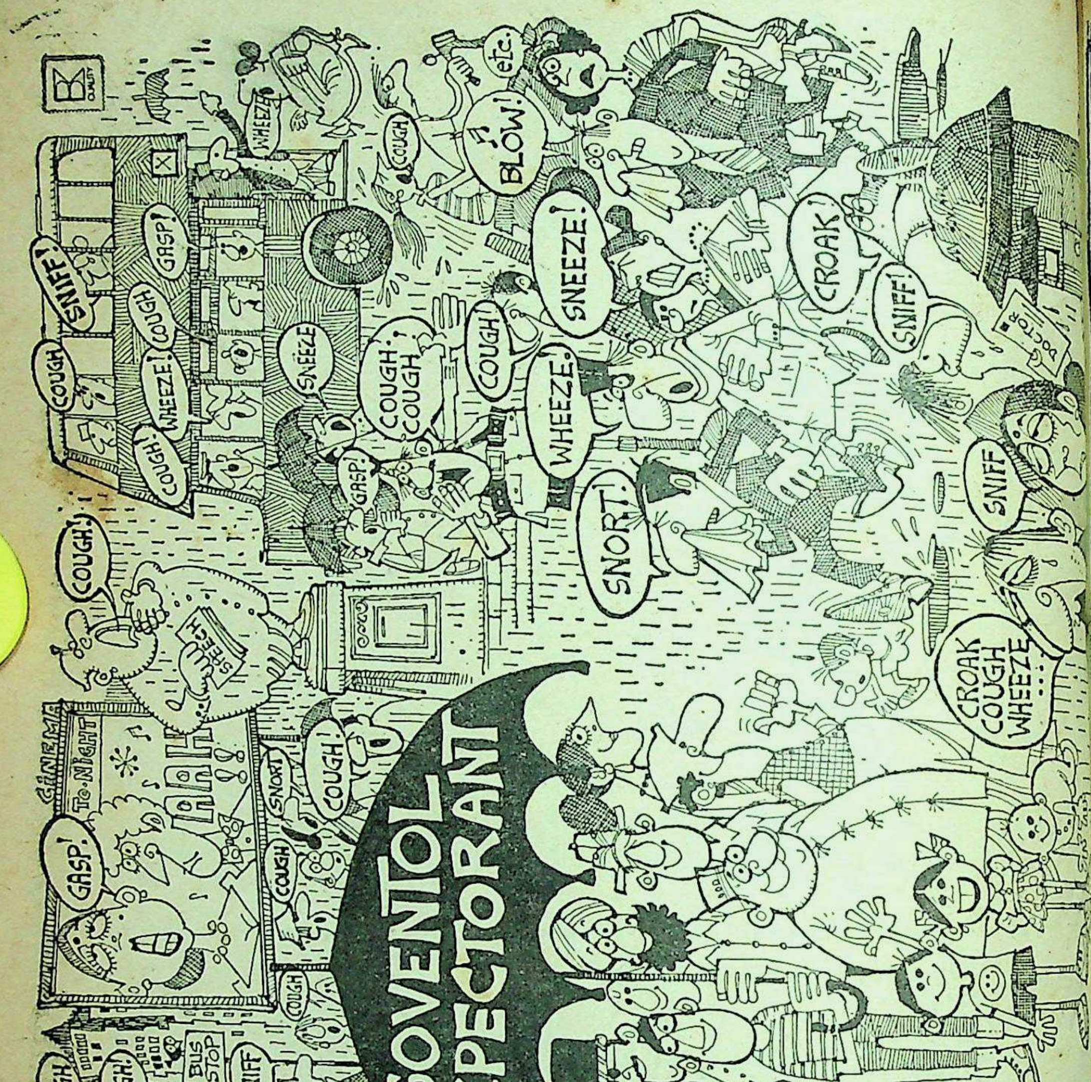
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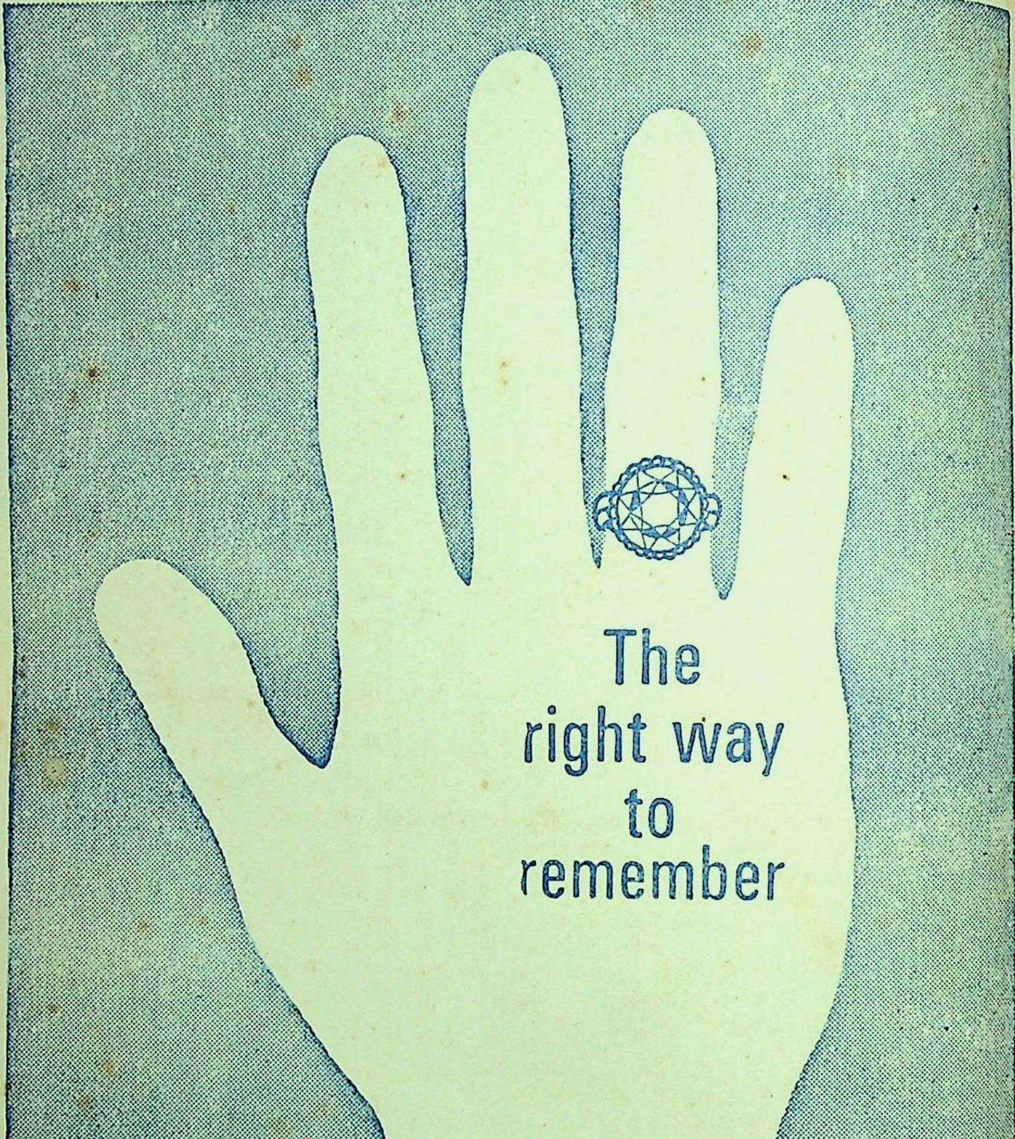

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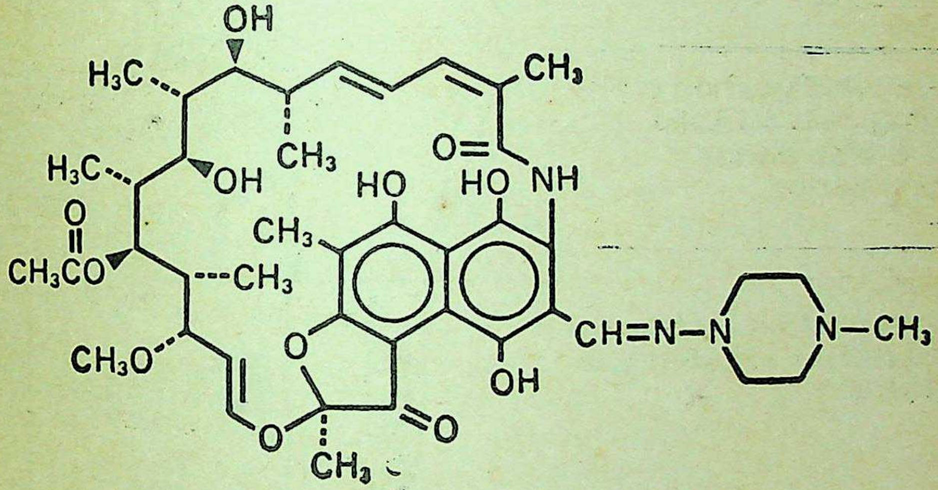
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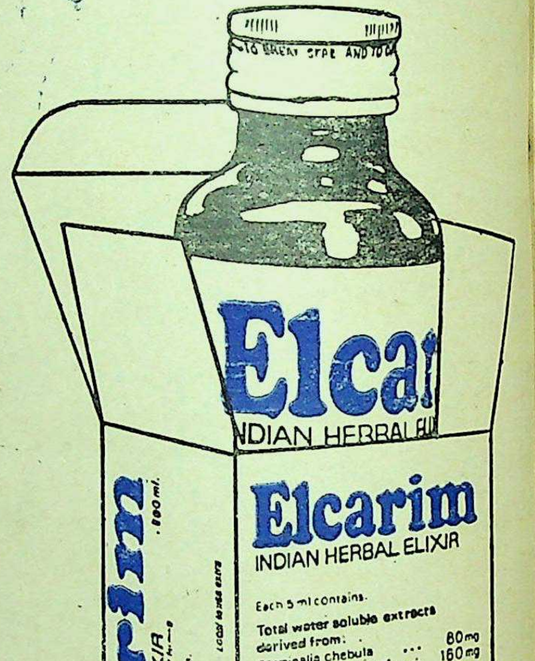
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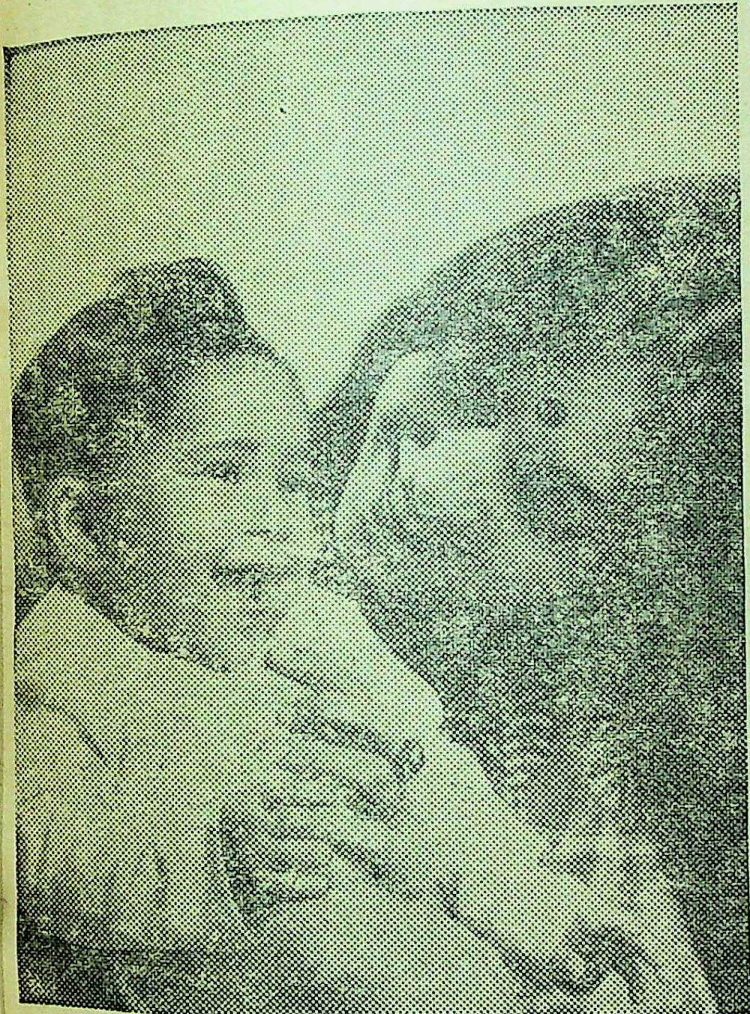

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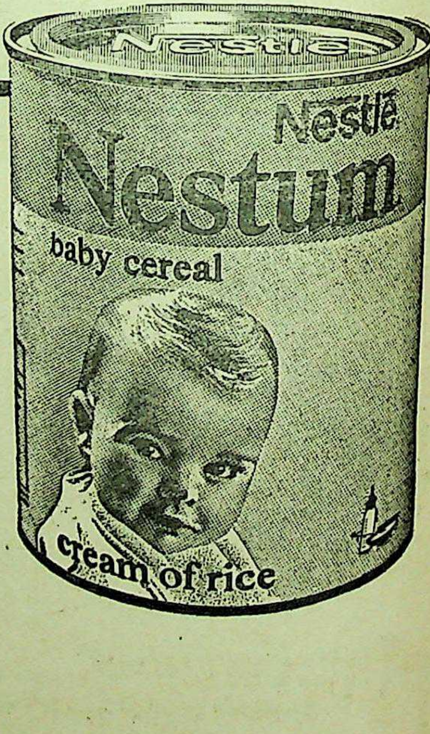

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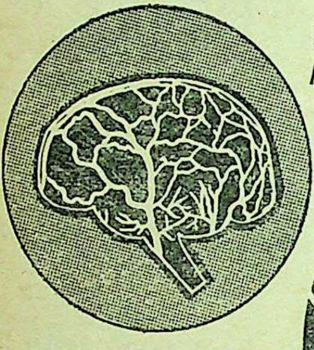
SAHAR ROAD, ANDHERI (EAST), BOMBAY-400 093.

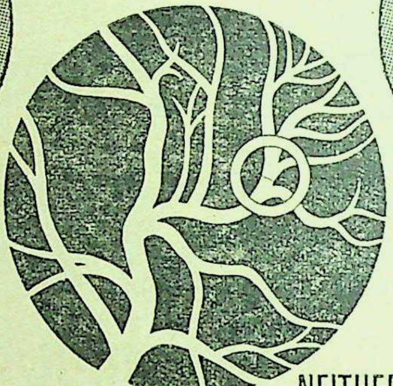
RAJPSUNI/1257A Medical Adv.

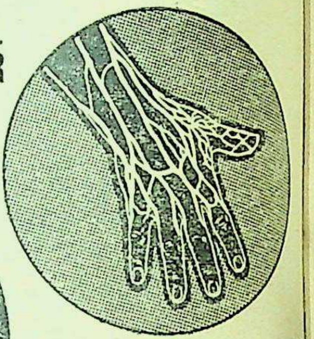
CeVadil

200 mg. CAPSULES OF CYCLANDELATE

THE THERAPY THAT MAKES SENSE IN CEREBRAL AND PERIPHERAL VASCULAR DISORDERS







CeVadil brings about a gradual and progressive relaxation of vascular smooth muscle and thus increases the blood flow to the extremities of brain and limbs

—also promotes collateral circulation and stimulates the development and growth of dormant collaterals.

—improves circulation and thereby promotes healing of ulcers of the legs and inhibits formation of gangrene.

CeVadil is
NEITHER A GANGLION BLOCKER
nor
AN ADRENERGIC BLOCKING AGENT
nor
A BETA ADRENERGIC STIMULANT
Hence **CeVadil** does not influence
HEART RATE
FORCE OF CONTRACTION or
SYSTEMIC ARTERIAL PRESSURE

..thus CeVadil is Highly Effective and Remarkably Nontoxic

INDICATIONS:
CeVadil is useful in treating various vascular conditions due to vasospasm and arteriosclerotic changes like: Raynaud's syndrome, Acrocyanosis, Intermittent claudication, Peripheral arteriosclerotic conditions, Thrombophlebitis, Thrombo-angitis obliterans (Buerger's disease), Frostbite, Cerebral arteriosclerosis and associated Mental disorders and Transient ischemic attacks initiated by vasospasm.

PRESENTATION:
10 capsules strips

Promoted and Distributed by:
STERKEM PHARMA CORPORATION
KHIRA INDUSTRIAL ESTATE,
BOMBAY 400 054.

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LABORATORIES
38, SUREN ROAD,
BOMBAY 400 093.

.Summit

THE NEW BREAKTHROUGH

in the treatment and prophylaxis of malaria

metakelfin®

single dose therapy

Especially in the treatment of chloroquine resistant cases

Prompt Broad Spectrum Action • Convenient • Safe

COMPOSITION
Each tablet contains
Sulphamethopyrazine ......500 mg
Pyrimethamine ...... 25 mg

INDICATIONS
Therapy and prophylaxis of Malaria caused by P. falciparum, P. vivax, P. malariae, P. ovale.

DOSAGE
Adults: 2 tablets in a single dose, to be repeated after a week, if necessary.
Children: 25 mg/kg (with reference to SMP) in a single dose.

PRESENTATION Pack of 2 tablets

Manufactured In India by
WB Walter Bushnell Private Limited
Steelcrete House, 7th Floor,
3, Dinshaw Wacha Road,
Bombay 400 020.

Under licence from
FARMITALIA - GROUP
MONTEDISON - MILAN

FLUCORT

Fluocinolone Acetonide 0.025% skin ointment

FL
FLUCORT
Skin ointment
FLUOCINOLONE ACETONIDE
5g.

LYKA

Available as:
5 g. and 15 g. tubes.
Also available as
Flucort-N and
Flucort-C
skin ointments.
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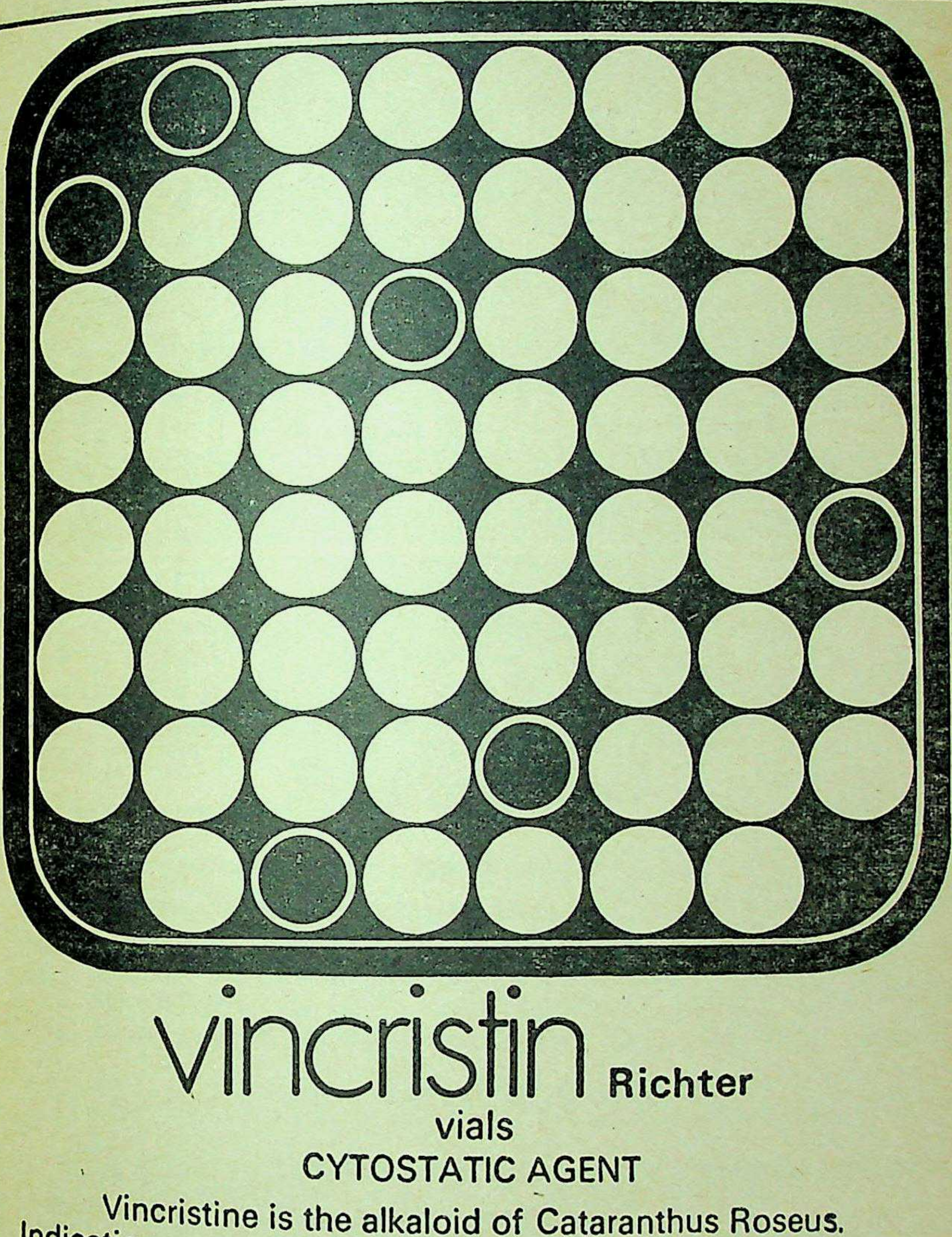
Phones: 576947 • 563122
Gram: 'LYKAPEN'
Bombay-400 057.

Beats better ones in small strength

For further particulars please contact:

LYKA LABS
77, Nehru Road, Vile Parle-East
Bombay-400 057



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vials
CYTOSTATIC AGENT

Vincristine is the alkaloid of Cataranthus Roseus. Indication: acute leukaemia, primarily in childhood, alone or in combination with steroids. It is highly effective in Hodgkin's disease and reticular sarcoma.

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GONADOTRAPHON F. S. H. 1000 i. u.
(Serum Gonadotrophin 1000 i. u.)

and

GONADOTRAPHON L. H. 1000 i. u.
(Chorionic Gonadotiophin 1000 i. u.)

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Bombay- 400 002 Phone : 315534 253918.
Cable: MULTIBIO Telex: 011-4088-BYKM
FACTORY Vikhroli (w), Bombay-400 083 Phone : 584673

Manufacturers of

BIOCILIN-(Ampicillin) Caps. 250 mg./ 500 mg.
Dry Syrup. 125 mg. / 5 ml - 250 mg. / 5 ml
Inj. - 100 mg. , 250 mg. , 500 mg. and 1 gm.
MOXILIUM- (Amoxycillin) Caps. 250 mg. and 500 mg.,
Dry syrup 125 mg. / 5 ml.
CEPHAXIN- Cephalexin Caps. 250 mg. and 500 mg.
Cephaloridine Inj. - 0. 5 gm. and 1 gm.
BIOGARACIN (Gentamicin inj.) - 80 mg. in 2 ml. vial
60 mg. in 1.5 ml. amp.
MITOMYCIN - C 2 mg. - Anticancer antibiotic, from Japan
FLURACIL (5-FLUOROURACIL) Inj. 250 mg. in 5 ml amp.
Caps. 250 mg.

new product

A REVOLUTION IN AMPICILLIN THERAPY

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ADDITION
TO
THE
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OF
ANTIBIOTICS

Moxilium
MEANS
MIGHTY
ORAL
X·ANTIBIOTIC
IDEAL FOR
LIFE THREATENING
INFECTIONS-A
UNIQUE
MISSILE
IS
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TRIHYDRATE

MITOMYCIN-C BIOGARACIN
BIOCILIN BIODOXI
CLOXACILLIN CEPHAXIN
KANSULF
(Kanamycin Sulphate) Inj. 0.5g. - 1 g.

new product

new product new product new product new product

FOR DETAILED LITERATURE KINDLY WRITE TO

Biochem

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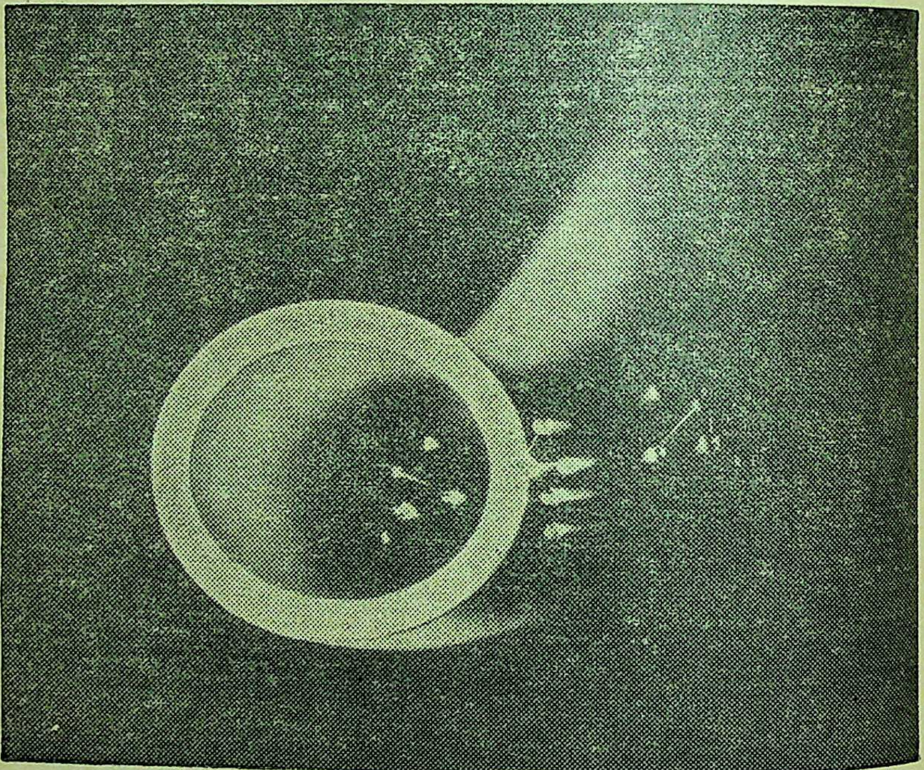
b

natrilix®
Indapamide

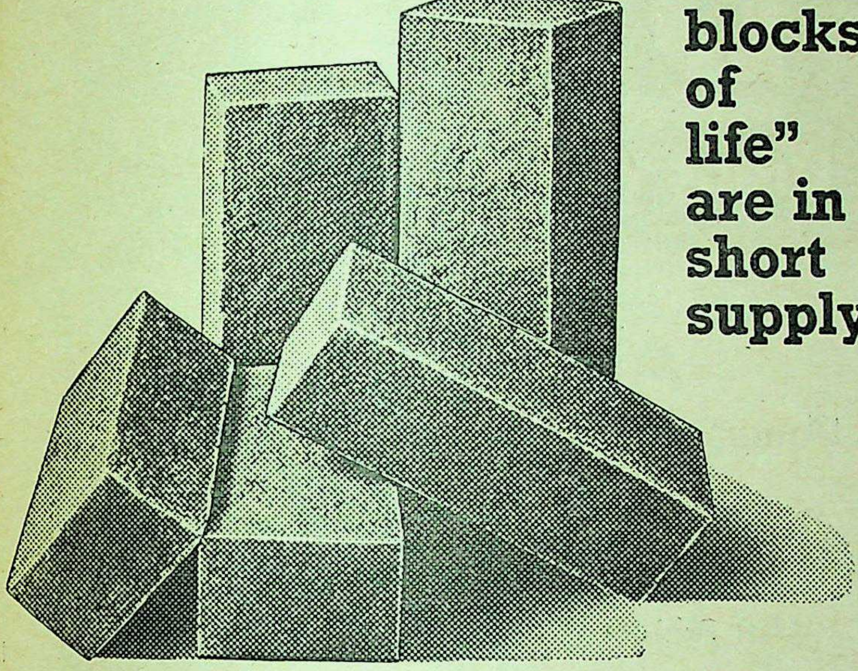
The first line treatment for hypertension



one tablet daily

Composition: Each sugar-coated tablet contains
Indapamide......2.5 mg
Indications: Mild to moderate essential hypertension
Presentation: Pack of 3 x 10 tablets

Manufactured in India by
WB Walter Bushnell Private Limited
Steelcrete House, 7th Floor, 3, Dinshaw Wacha Road, Bombay 400 020.
under licence from
LES LABORATOIRES SERVIER
45, Gidy France



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(nutrient supplement)

Provides effective protein nutrient supplementation

- Helps restore positive nitrogen balance
- Contains protein ingredients, casein and lactalbumin selected for their high nutritive value and digestibility
- Provides sufficient carbohydrate to minimize the use of the protein content for other than tissue-building purposes
- Its palatability facilitates its integration into the diet in a wide variety of acceptable forms

SUPPLIED:
In bottles of 200 gm and 400 gm.
NOTE:
More information on use available to physicians on request.

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Distributors: Voltas Limited

where today's theory is tomorrow's therapy

2-80 PCN-79-1-715-J

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Drugs with Dedication

AMIPEN
(Ampicillin Capsule & Dry Syrup)

AMIPEN-500
(Ampicillin 500 mg. Capsule)

AMINOMYCIN
(Gentamicin Injection)

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(Co-Trimoxazole Capsule)

TRIMETHOX – D.S.
(Co-Trimoxazole Double Strength Tablet)

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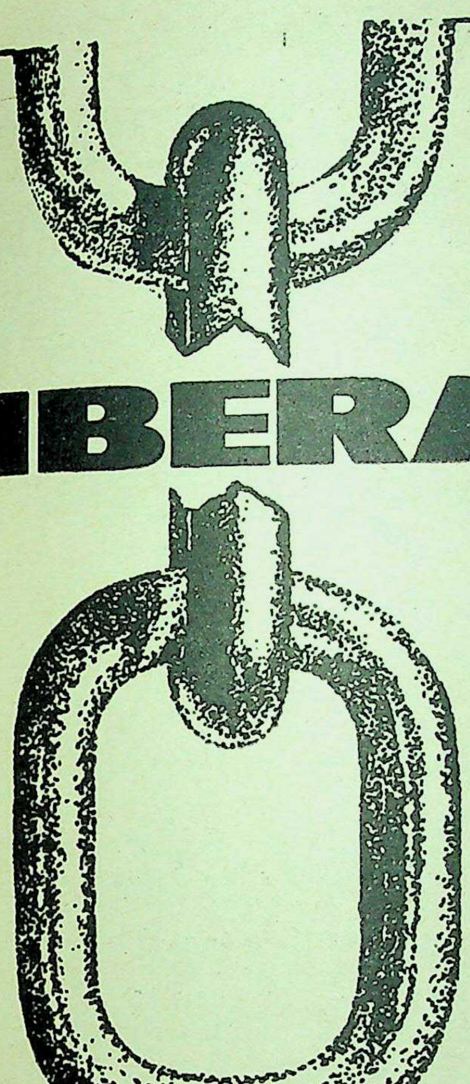

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From MALE SEXUAL INADEQUACY Assured

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POTENZA
-For the under 40's

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-For the over 50's

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Rejuvenators
of unfailing efficacy.

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of the times
AMOXYCILLIN
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Novamox
Amoxycillin Capsules B.P.

Amoxycillin—NOVAMOX—introduced
for the first time in India by CIPLA, is
one of the latest semi-synthetic aminopenicillins.
The broad-spectrum of NOVAMOX—Amoxycillin—combined with
its distinctive pharmacological advantages over earlier antibiotics
is most strikingly reflected in the high percentage cure rates
in a wide range of infective conditions . . . more than justifying
the role of this superior new antibiotic
in general and specialised practice.

Novamox the best yet!
(Capsules of Amoxycillin 250 mg) in vials of 3's and 12's

Manufactured by OKASA, CO. PVT. LTD., 12 Gunbow Street, Bombay 400 001.
Marketed by CIPLA, 289 Bellasis Road, Bombay 400 008.

THE 7 DAY THERAPY
for Leucorrhoeas/Vaginitis

WHERE
CLINICAL DIAGNOSIS MAY BE
DIFFICULT · EXPENSIVE · TIME-CONSUMING

START RIGHT WITH

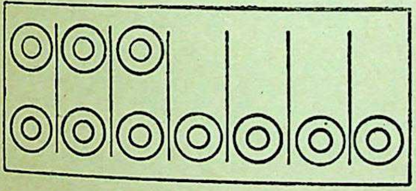
MYCONIP®
(Brand of Lactobacillus Sporogenes)

CLINICAL EVIDENCE — MYCONIP® ASSURES 91% CURE RATE

pH-REGULATING EFFECT — MYCONIP® Maintains normal pH and restores vaginal flora

SAFETY — MYCONIP® is free from side effects
NON-STAINING—NON-IRRITATING
NON-PATHOGENIC

DOSAGE :



One tablet twice a day for 3 days and one tablet at bedtime for next four days. To be continued if desired.

PRESENTATION :
MYCONIP is available in a tube of 10 tablets.

REFERENCES :

1. MYCONIP (Vaginal Tablets) produced good results in 91% cases of non-specific leucorrhoea.
   (Dr. Miss P. C. Sankholkar, Prof. & Head, Obst. & Gyn. Dept., B. J. Medical College, Pune, The Indian Practitioner, March 1978, Vol XXXI, No. 3)
2. MYCONIP (Vaginal Tablets) gave overall response of 84% without any side effects.
   (Dr. D. S. Kamat & Dr. S. B. Mujumdar, Dr. V. M. Medical College, Sholapur, Maharashtra Medical Journal, Dec. 1977).
3. MYCONIP (Vaginal Tablets) gave good results in post-operative vaginal hysterectomies, vaginitis, cervicitis and non-specific leucorrhoeas.
   (Dr. Mrs. N. Loka Bai, Addl. Prof. of Obst. & Gyneco., Osmania Medical College, Hyderabad, Andhra Pradesh Medical Journal, Vol. II April 78).
4. Certain intestinal flora, especially Enterobacteriaceae and Lactobacilli, inhibit the growth of candida.
   (The Medical Annual 1977-78 (Page No. 46)
   (Reference: Kane J. G., Chretien J. H. and Garagusi V. F. (1976) Lancet I, 335)

AN IDEAL ADJUNCTIVE THERAPY IN TRICHOMONIASIS

Manufactured by :
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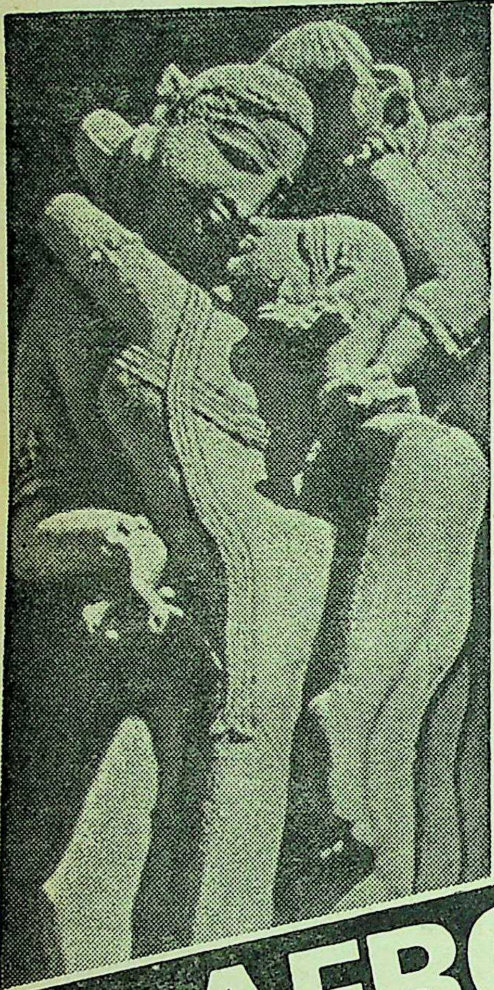
Reg. Office : Plot 37, Road No. 10, Banjara Hills
Hyderabad-500 034 (A.P.)

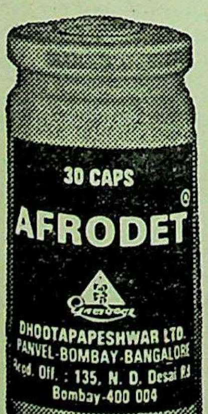
3 BROTHERS



THE MIDDLE AGE NEED REASSURANCE AND RESTORATION

AFRODET®

A NON HORMONAL RESTORATIVE FOR MEN & WOMEN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Restores & elevates confidence and minimises the incidences of embarrassment and guilt.

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Helps to attain and maintain erection.

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INNOVATION/DL

CONTROL THE STEROID RESPONSIVE DERMATOSES PROMPTLY WITH...

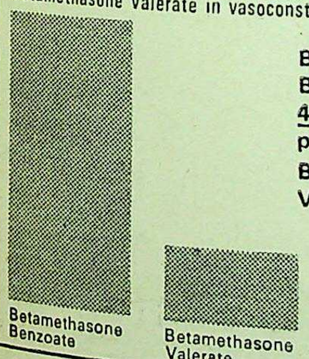
the latest topical steroid...

Topicasone* cream

Topicasone* with Neomycin cream

- **BETAMETHASONE BENZOATE** is a highly potent salt of Betamethasone which gives prompt results in all steroid responsive dermatoses.
- "**BETAMETHASONE 17-BENZOATE** at a concentration of 0.025% was as potent a vasoconstrictor as Betamethasone valerate at 4 times the concentration."

P. Hall-Smith—Brit. Jour. Clin. Pract. 2:422, 1972.



Potency of Betamethasone Benzoate and Betamethasone Valerate in vasoconstrictor test.

Betamethasone Benzoate is 4 times more potent than Betamethasone Valerate.

FORMULA:

TOPICASONE CREAM:

Betamethasone Benzoate U.S.P.	0.025%	w/w
Cream base		q.s

TOPICASONE with NEOMYCIN CREAM:

Betamethasone Benzoate	U.S.P.	0.025%	w/w.
Neomycin Sulphate	I.P.	0.5%	w/w.
Cream base			q.s.

INDICATIONS:

TOPICASONE CREAM is indicated in all inflammatory diseases of the skin, which are responsive to topical steroids. In case of superadded bacterial infection, TOPICASONE with NEOMYCIN CREAM should be used.

PRESENTATION:

TOPICASONE CREAM and TOPICASONE with NEOMYCIN CREAM both are available in tubes of 5 gms. and 15 gms.

Particulars from:

FRANCO-INDIAN PHARMACEUTICALS PVT. LTD.
20, DR. E. MOSES ROAD, BOMBAY-400 011.

**Does Your Patient
Have High B. P. ?
Only you can Prevent...**

**The dire consequences of
undetected/untreated hypertension on
BRAIN-KIDNEY-HEART and
BLOOD VESSELS
WITH**

**ARKAMIN®-H
& ARKAMIN® TABLETS**

ARKAMIN®-H & ARKAMIN® TABLETS
offer safe and effective control of hypertension
without affecting the quality of life

ARKAMIN®-H & ARKAMIN® TABLETS

- ★ Do not impair cardiovascular reflexes
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Further information is available on request.

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A TRUSTED NAME IN PHARMACEUTICALS

ARK-1-77-3 BF

ATTENTION!
PATHOLOGISTS-GYNAECOLOGISTS

NOW AVAILABLE
PREGNANCY TEST KIT

"PREGNY TEST"

INDIGENOUSLY DEVELOPED AND
MANUFACTURED IN INDIA BY

SPAN
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Surat (GUJARAT)

SIMPLE & RAPID slide test
(TWO minutes)
Positive & negative control
urine provided in the kit.
Available at economical Price.
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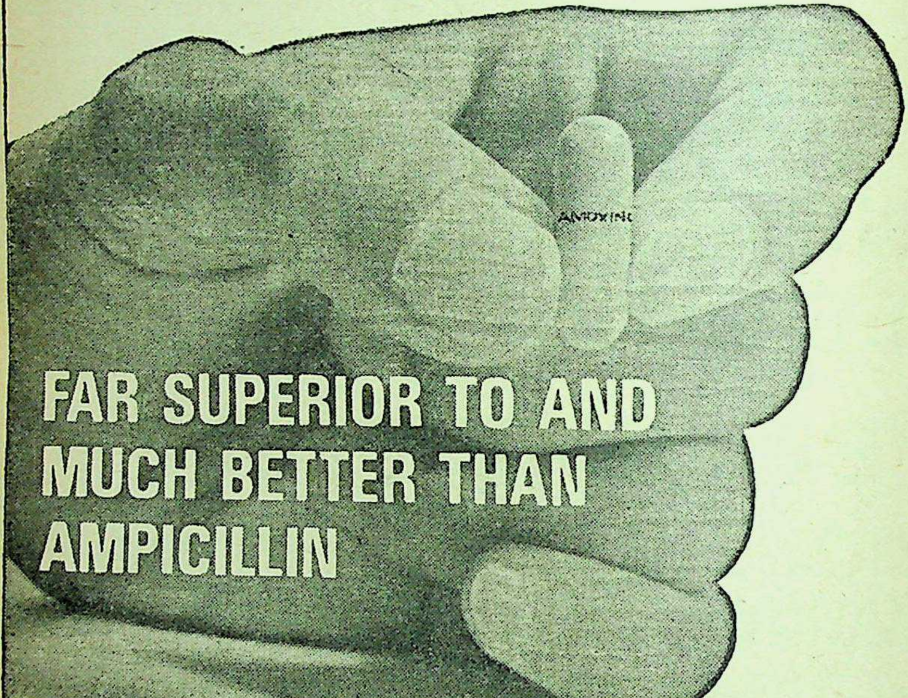
AMOXINGA
CAPSULES
(Amoxycillin)
The latest
broad spectrum Antibioti



COMPOSITION:
Each capsule contains:
Amoxycillin Trihydrate B. P......250 mg.

INDICATIONS:
● Urinary tract infections ● Respiratory tract infections ● Meningitis, subacute bacterial endocarditis ● Biliary tract infections ● tonsilitis, sinusitis, otitis, soft tissue infections, abscesses. ● Intestinal infections
● Preferred to tetracyclines in pregnant women & infants.

DOSAGE:
In Mild to moderate infection : 1 capsule three times a day
In severe infections : 2 capsules three times a day initially and maintenance dose of 1 capsule three times a day.
Children: 20-40 mg./kg./day in divided doses every 8 hours.

PRESENTATION:
Available in strip of 4 capsules.

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INGA LABORATORIES PVT. LTD.
Mahakali Road, Andheri, BOMBAY-400 093.

Glyciphage®

–the safest oral antidiabetic agent

- Smooth reduction in blood sugar levels
- No hypoglycemic episodes
- No lactic acidosis

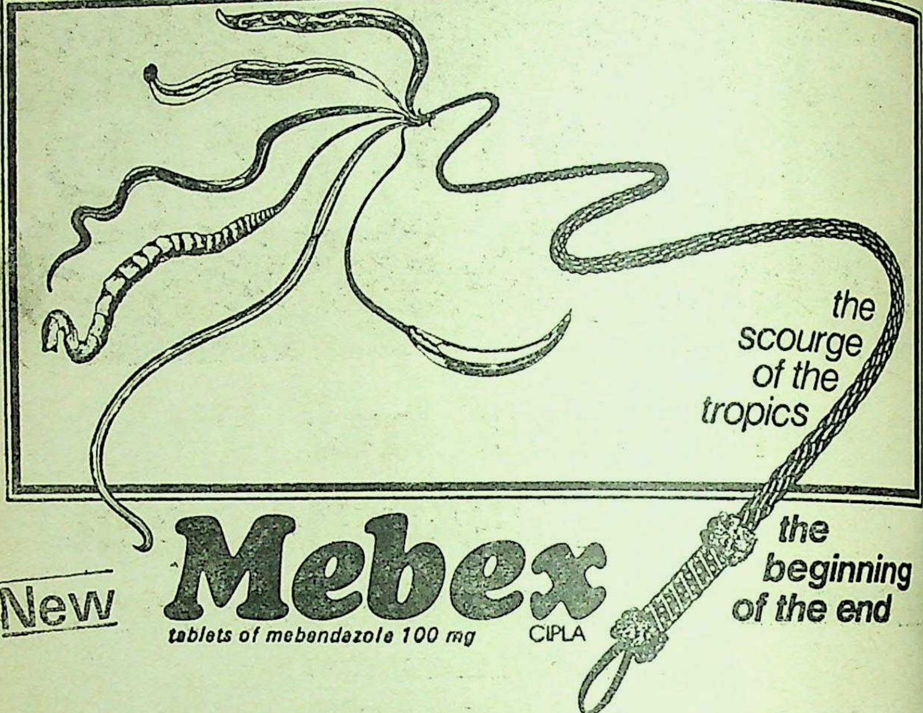
"We believe that Phenformin no longer has a place in the treatment of diabetes and should be withdrawn...When a biguanide is indicated Metformin should be used."
(E.A.M. Gale and R.B. Tattersall, B.M.J., 2: 972, 1976)

"The fact remains that Metformin associated lactic acidosis cases are rare."
(Clinical & Biochemical Aspects of Lactic Acidosis, R. D. Cohen and H. Frank Woods, Blackwell Scientific Publications, 1976)

"In France where 76% of biguanide therapy is with Metformin and only 24% with Phenformin, there is sixfold greater incidence of lactic acidosis with Phenformin."
(K.G.M.M. Alberti and M. Nallrass, Lancet, July 1977)

COMPOSITION
Each tablet contains:
Metformin Hydrochloride B.P. 0.5 g.
Excipients q.s.

FRANCO-INDIAN
PHARMACEUTICALS PVT. LTD.
20, DR. E. MOSES ROAD, BOMBAY-400 011.



New **Mebex**
tablets of mebendazole 100 mg
CIPLA

To the lay mind, the term "Scourge of the Tropics" might appear an exaggerated description of the problem of helminthiasis in India. To the practised professional eye however, the phrase vividly portrays the endemic extent of this insidious condition.

It is in the context of today's need for an anthelmintic that is effective in mixed infestations, that is simple, safe and economical, that CIPLA has introduced MEBEX.

Extensive documentation rates MEBEX (mebendazole) superior to all earlier anthelmintics... MEBEX (mebendazole) has also been assessed NUMBER ONE drug for helminthiasis ("Model List of Essential Drugs"— WHO Expert Committee)

MEBEX is a remarkable broad-spectrum anthelmintic—with a proven cure rate of 80—100 per cent against Hookworm, Roundworm, Pinworm, Threadworm and even the notoriously difficult-to-eradicate Whipworm.

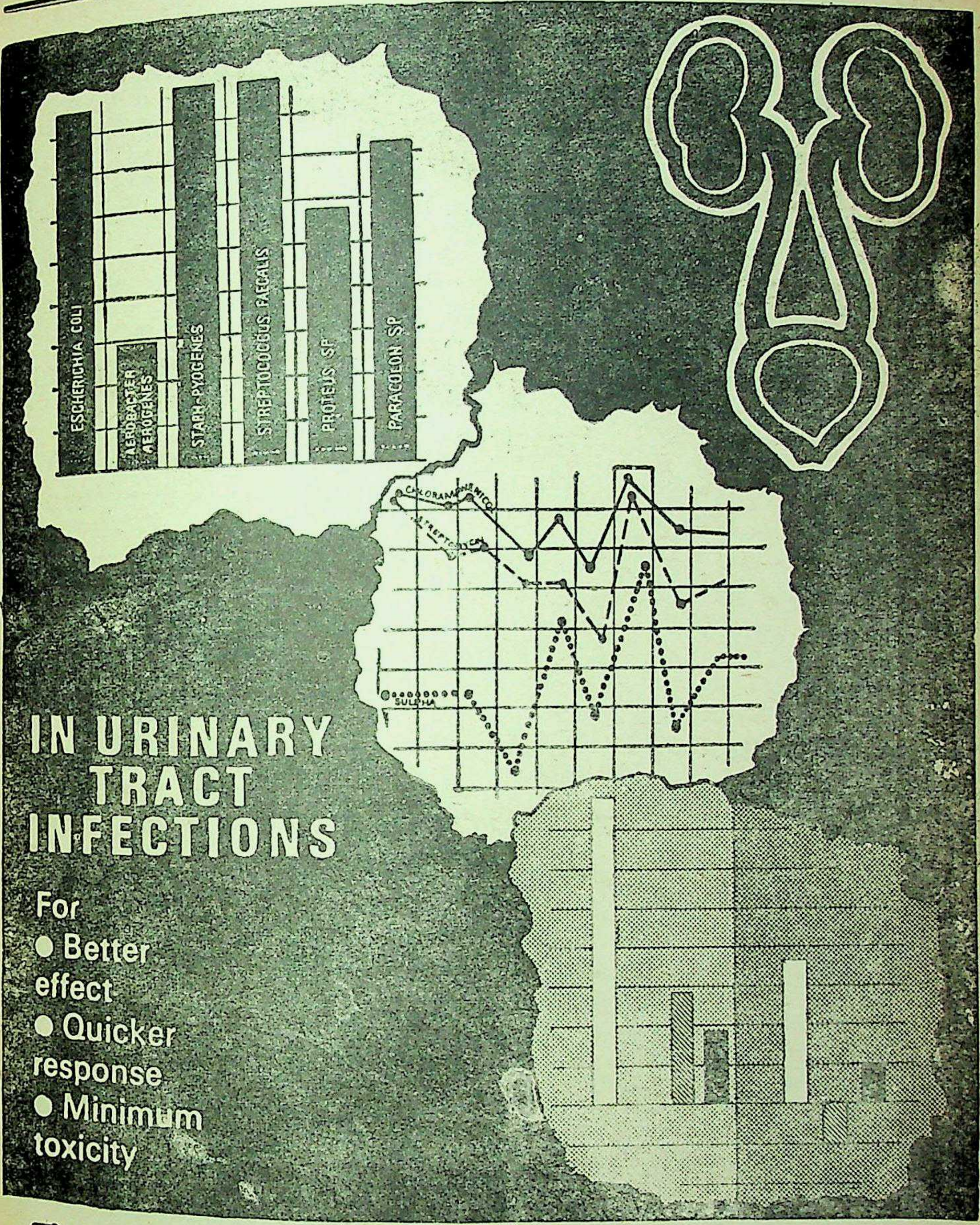
MEBEX acts by causing selective and irreversible inhibition of glucose uptake in helminths, resulting in their immobilization and death.

MEBEX is poorly absorbed from the gastrointestinal tract, is remarkably free from side effects, and does not cause toxicity even in the presence of anaemia/malnutrition. MEBEX has a convenient dosage schedule —1 tablet b.i.d. for 3 consecutive days, both for adults and children.

MEBEX is available in strips of 6 tablets at a most economical price.

Mebex
CIPLA
the one-for-all
once-for-all anthelmintic

CIPLA 289, Bellasis Road, Bombay 400 008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AEROBACTER AEROGENES
STAPH-PYOGENES
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IN URINARY TRACT INFECTIONS

For
- Better effect
- Quicker response
- Minimum toxicity

ENTEROFURANTIN

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FORTE CAPSULES
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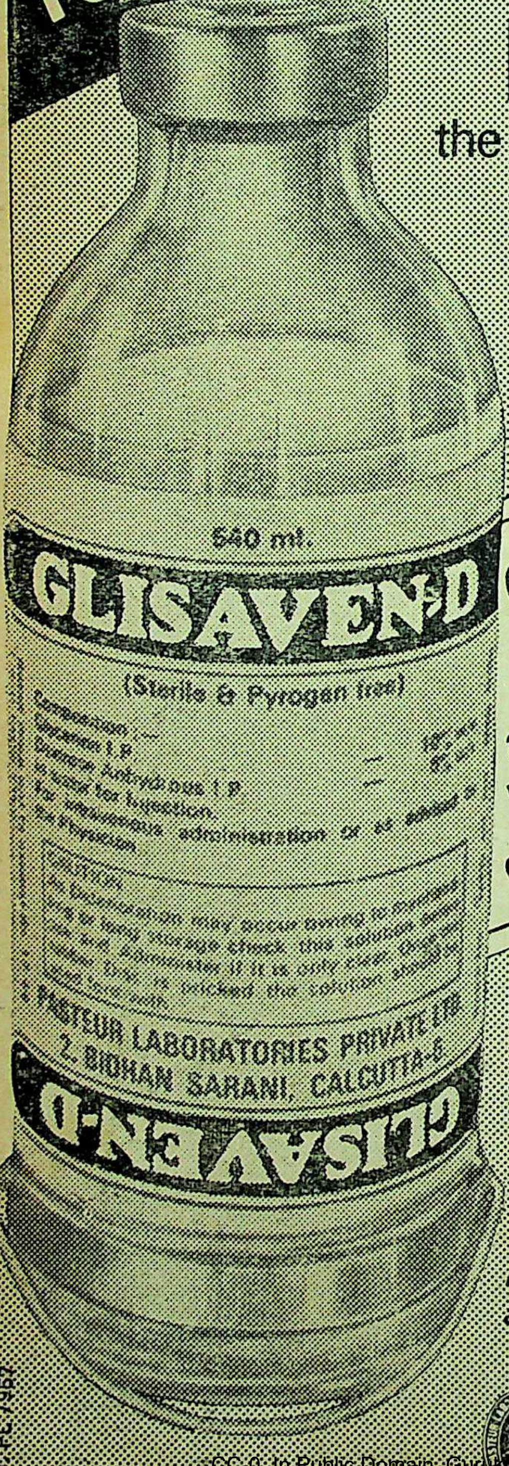
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introduces

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an intravenous Glycerine with Dextrose for the managemen of cardiovascular disturbance

Composition :-

Glycerine I.P. 10%
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in water for injection.

Presentation :-

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Detailed information may be available on request.

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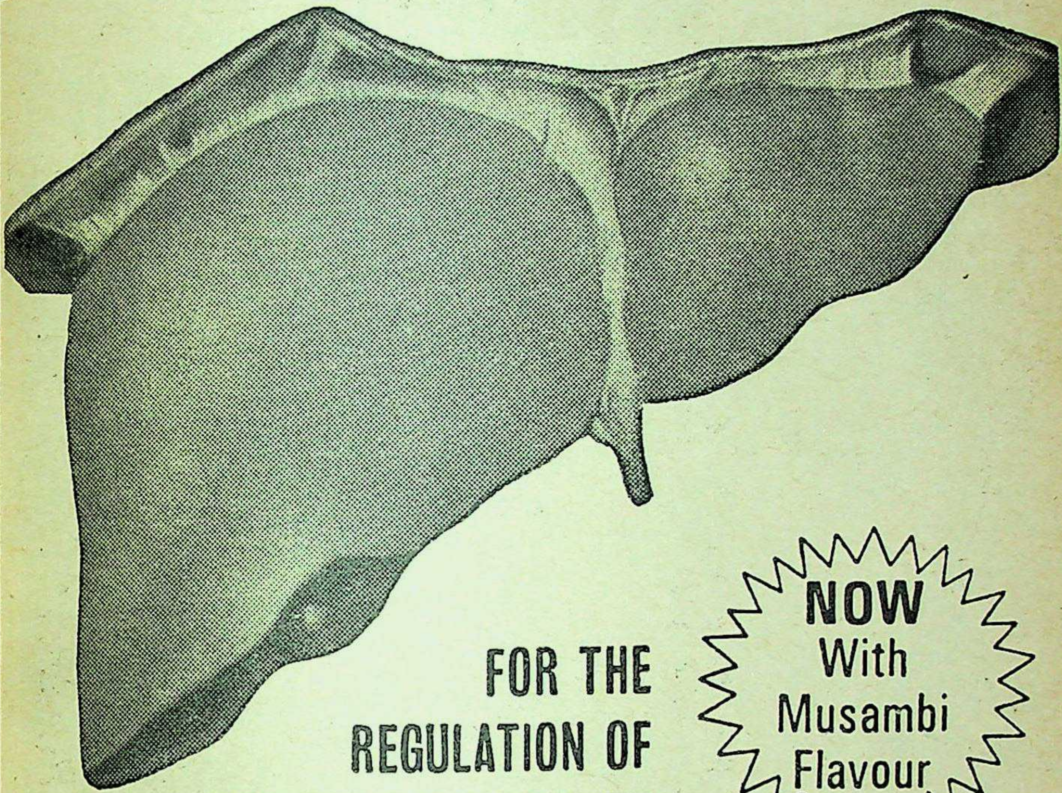

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THE HEPATO-DIGESTIVE
FUNCTION

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With
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Flavour

SORBILINE®

A Hepato-Biliary Regulator

COMPOSITION

Each 10 ml. contains :
Tricholine Citrate ………………0.55 g.
Sorbitol Solution U.S.P. … … 7.15 g.
Tartrazine … … … … … … … … q.s.
(colour index 19140).

PRESENTATION

Bottles of 100 ml. and 200 ml.

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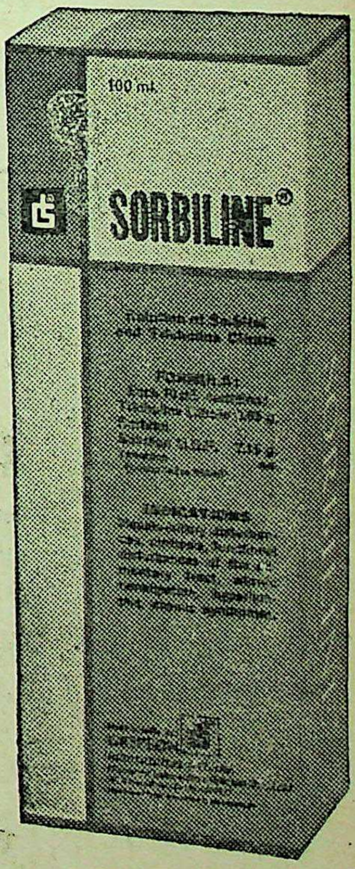
(Registered Proprietor of the Trade-marks ®)



VITILIGO
kept him in the DARK!!

Lead him
into the SUNSHINE with

NEOSORALEN
TRIOXSALEN U.S.P.

Packing
Bottle of 20 dragees • Each dragee of 5 mg.
Bottle of 15 ml. lotion • 0.2%

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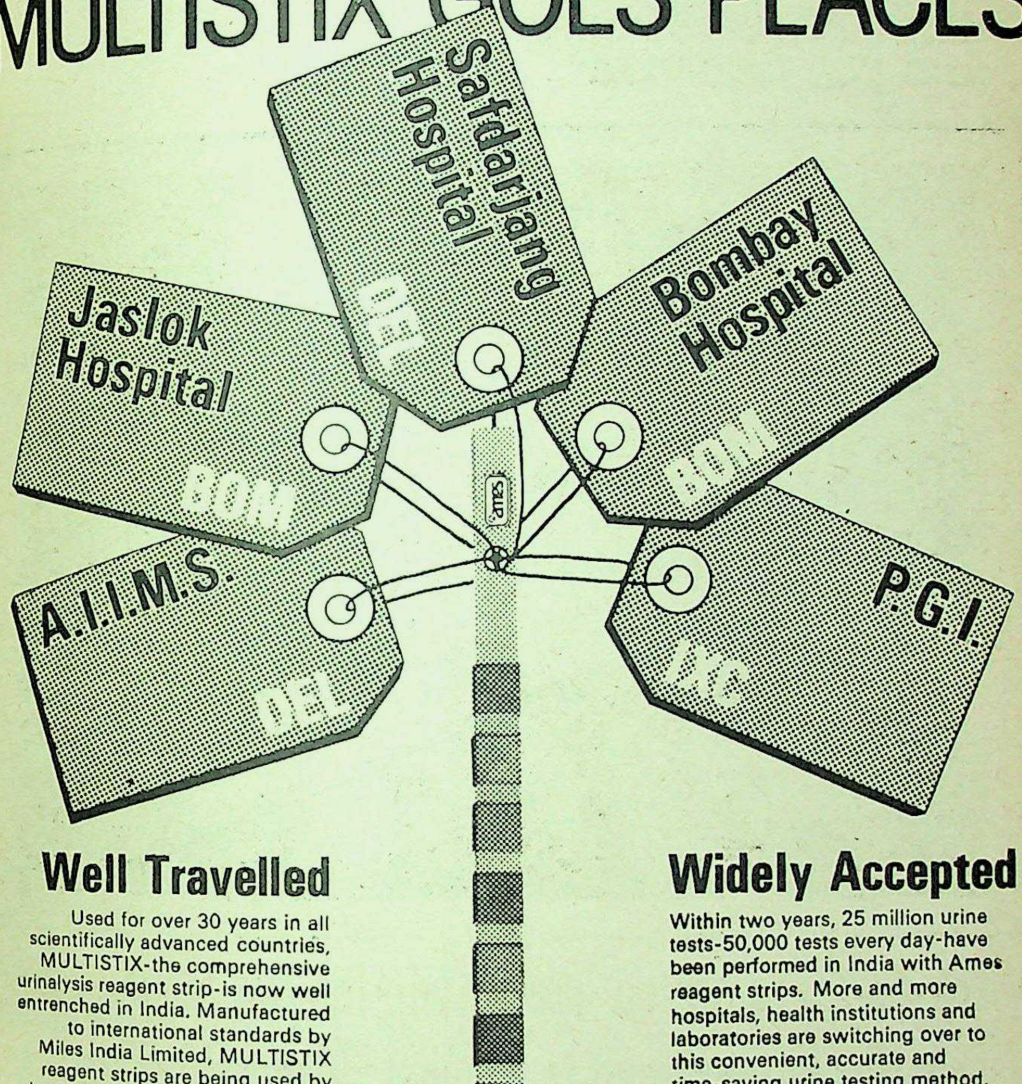

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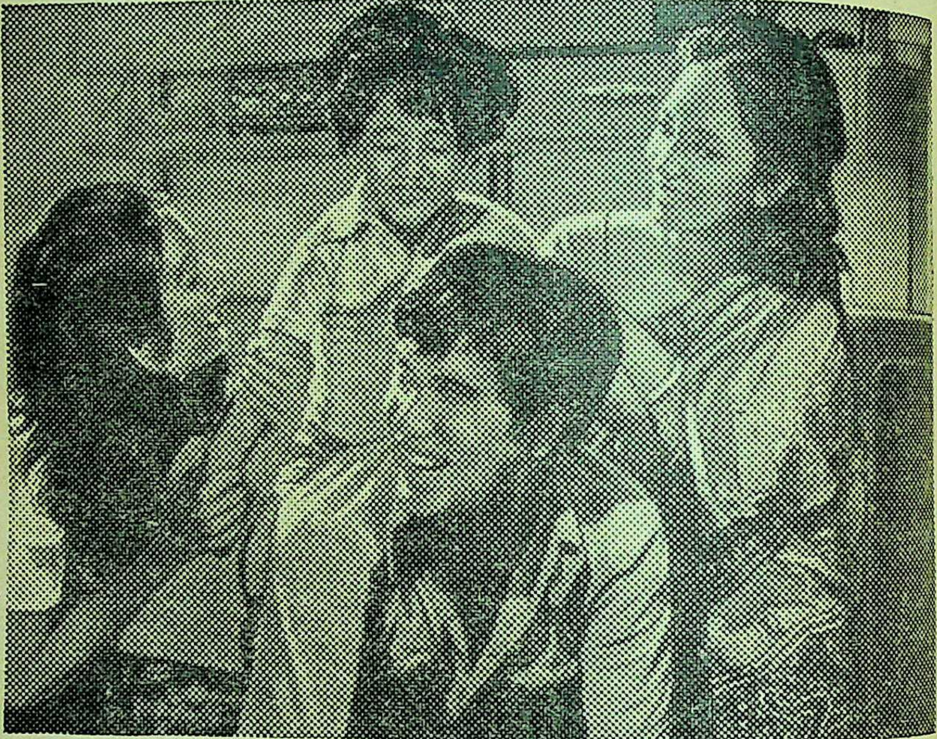

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Original Articles

ORGANOPHOSPHORUS POISONING*

(A CLINICAL STUDY)

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INTRODUCTION :—The increase in the number of organophosphorus compounds used as insecticides during the last two decades has brought in its wake a group of dangerous poisons which has led to their use for suicidal, homicidal purposes or accidental ingestion or inhalation resulting in a very high mortality.

These compounds are extensively used as pesticides in agriculture and also find a place in domestic use against rodents and vermins. They are cheap and easily available. There is no restriction on the sale of these dangerous compounds, which can be procured easily over the counter. Hence poisoning by these compounds is quite common and can occur accidentally due to lack of sufficient precautions while handling these in agricultural operations or in domestic use or due to inadvertent mixing up of these compounds with food stuffs such as grains during transport or storage or consumption of these substances for suicidal purposes or as a deliberate homicidal agent. As homicidal agents th substances have a certain amount of popularity because of th rapidity of action and for this purpose they are usually mi with alcohol to mask their characteristic smell. The managem of these cases is a medical emergency and poses problems whi are peculiar due to the specific action of these compounds on t neuro-muscular system. The symptoms of poisoning are due the specific action of these compounds in inhibiting cholinester activity which results in accumulation of acetylcholine at t neuro-muscular junction and which in turn produces its cent nicotinic and muscarinic action on the neuro-muscular syste The treatment of poisoning consists of besides general manag ment, the use of specific drugs to counteract the various actio of acetylcholine.

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*Specially contributed to the 'ANTISEPTIC'.

In view of the fact that these poisoning cases constitut sizable proportion of hospital admissions, we are presenting t review of 100 cases which occurred during the period of 1976

Material and methods—The material for the study cons of cases of organophosphorus compounds admitted into our u during the period 1976—77. The 100 cases which form t subject of our study we analysed as regards their ag sex, duration of the poisoni symptomatology, treatment a the final outcome.

TABLE I

Showing the age and sex incidence of poisoning cases

Age group	No. of cases	Sex	
		Male	Female
1 —10 years ...	—	—	—
10—20 years ...	37%	28%	9%
20—30 years ...	48%	43%	5%
30—40 years ...	9%	5%	4%
40—50 years ...	4%	3%	1%
50—60 years ...	2%	2%	—

TABLE II

Showing the time interval between poisoning and death

Time interval between ingestion of poison death	Number cases (
Less than six hours ...	6
Less than twelve hours .	3
Between 48—72 hours ...	6
More than 72 hours ...	1

There were sixteen deaths in this series (16%) The mortali was due to a number of variable factors such as the quanti ingested, time interval between ingestion of poison and t institution of treatment, presence or absence of coma peripheral failure. It was also noted that severe poisoning ca needed large doses of atropine and mortality was high inspi of this; on the other hand cases that needed smaller doses atropine fared better.

Discussion.—The maximum incidence (48%) of poison occurred in the age group of 20 and 30 years. This was follow by the 10 to 20 years age group (37%). Thus 85% occurred du the age where the victims were active and useful to society. The male to female ratio was 4 : 1.

TABLE III

Showing the number of atropine ampoules used and the outcome of the treatment

Number of atropine ampoules given		Number of cases	Number of cases recovered	Number of cases expired
Nil	...	6	6	Nil
Less than 10	...	47	44	3
10—20	...	28	22	6
20—30	...	6	3	3
30—40	...	5	4	1
40—50	...	1	1	Nil
50 and above	...	7	4	3

The symptoms of poisoning are customarily divided into early and late phases. The early symptoms are giddiness, headache, anorexia, nausea, a feeling of constriction around the chest, twitching of eye muscles. The late symptoms are vomiting, sweating, pallor, salivation, twitching of voluntary muscles, delirium, coma and death.

Regarding the time interval between the consumption of the poison and hospitalisation,—70% of the patients were hospitalised within 3 hours (20 minutes to 3 hours).

It is stated that the average lapse of time after substantial exposure before the terminal symptoms supervene appears to be about 9 to 10 hours from the onset of symptoms.[2] In the present series 6 deaths were encountered within 6 hours after poisoning. Among them 4 patients had deep coma and pulmonary oedema while two patients had circulatory failure. There were 7 deaths after the lapse of 48 hours. Dr. Khandekar has also reported initial improvement and then sudden deterioration culminating in death. He has reported dysrhythmias and ST-T changes in ECG and pointed that these changes in the myocardium may be the cause of the delayed death [3] Dr. Ganapathy and Dr. Janaki reported that cholinesterase activity was higher among the vegetarians. Even in mild cases of poisoning with organophosphorus compounds the activity came down to 8% and lower.[5]

In our series vomiting developed about 30 minutes after ingestion of the poison. Dr. P.S. Shankar from Karnataka reported that the duodenum appears to be very susceptible to the effects of cholinesterase inhibitors which manifests in increased tone and rhythmicity even when there are no effects on respiratory and circulatory systems.[6] Dixit and Srivastava also support the above statement by finding the features of gastroenteritis due to hypermotility of the gastrointestinal tract.[6]

It was also found in our series that the mortality was related directly to the dose of atropine administered (Table III). This implies that those patients needing large doses of atropine were poor risks and hence the mortality was high. In our series the six patients who did not receive any atropine recovered whereas the mortality was 50% in patients needing more than forty ampoules. It is also to be noted that in the presence of seve asphyxia and circulatory failure, atropine has no effect[4] This m also account for the poor prognosis and the need for large do In this connection it may be mentioned that atropine countera the muscarine—like actions of the poison and is not effecti against the nicotinic actions and paralysis. The drug pralidoxi (PAM) alleviates muscular weakness and is used along with at pine in organophosphorous poisoning. Most of our patie needed forty or less ampoules (20 mg). of atropine.

Summary.—Poisoning due to organophosphorus compounds constitu a significant number of admissions. The most vulnerable age group was b ween twenty and thirty years. The mortality was 16%. There were seven dea which occurred after forty-eight hours. It is important to remember the possibil of delayed death in the management of these cases. The mortality w also noted to be related to the dosage of atropine needed. Severe poison cases required large doses of atropine and also fared poorer. The prob factors for the necessity of high doses of atropine and increased mortality discussed.

Acknowledgement.—We thank the Dean, Tirunelveli Medical Coll Hospital for permitting us to publish this case report.

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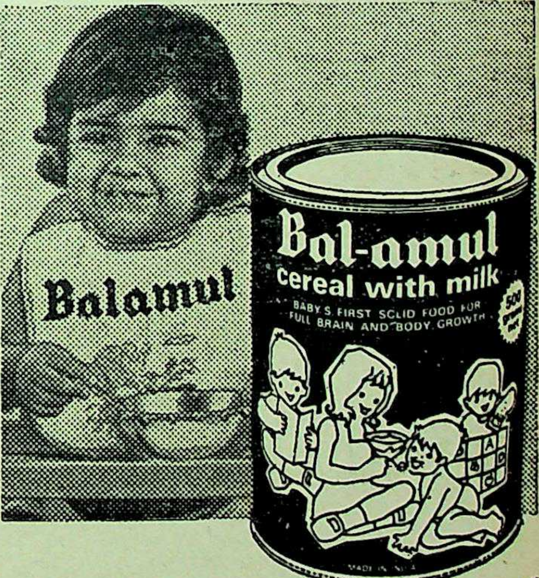

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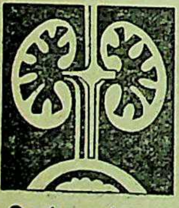
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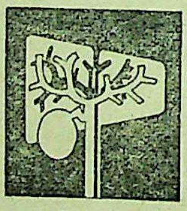
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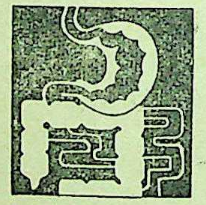
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HEPATOMEGALIES IN INFANCY AND CHILDHOOD*

(Results of a Clinical Study of 30 Cases)

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HEPATOMEGALY is a common clinical sign in pædiatric practice. The present study is an attempt to find out the distribution of various etiological factors of hepatomegalies in the pædiatric age group.

Material and methods.—Thirty children with varying grades of hepatomegaly admitted to the Government Wenlock Hospital, Mangalore were studied. Criteria for selection of the cases were hepatomegaly associated with other clinical features like fever, high coloured urine, jaundice, anorexia, loss of weight, and distension of the abdomen. Liver edge palpable more than 3·0—3·6 cm. in infancy and more than 3 cm. in the later childhood below the coastal margin in the midclavicular line in the supine position, was taken as the criterion in assessing hepatomegaly as suggested by Deligeoris *et al* (1970).

A detailed history of every child was elicited while paying special attention to the following points.

(1) Antenatal history of maternal jaundice, infections, transfusions and drugs and whether the delivery was conducted at home or in the hospital. (2) Postnatal history like jaundice in the newborn period, cyanosis, umbilical sepsis, and other infections. (3) Mode of feeding—whether the child was breast fed or artificially fed. (4) Socio-economic status of the family and the general health of the other members of the family.

A detailed physical examination of each child was done. The height and weight in each case was recorded with a view to assess the standard percentiles. Routine investigations like blood, urine, stool, Mantoux test and skiagram of chest were done in all the cases. Liver biopsy was done in all the children by the percutaneous method using the Vim-Silverman needle. Liver function tests were done in every case and the results obtained were published by the authors earlier (1974). (Table I)

It can be seen that cirrhosis of liver, infective hepatitis and tubercular granulomatous hepatitis accounted for 70% of the total cases studied.

Infective hepatitis.—Eight children in the present study had infective hepatitis. The ages of these children ranged from 2—12 years. Sex incidence was found to be equal. High coloured urine, fever, jaundice, distended abdomen, anorexia, loss of weight were the most common presenting symptoms infective hepatitis in children. Majority of the children (6 out 8) were non-vegetarians and only two were vegetarians. Most them were grossly underweight although the height did not see to have been affected concomitantly (Table II).

---

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*Specially contributed to the 'ANTISEPTIC'.

TABLE I

Showing incidence of hepatomegaly age and sex-wise

S. No.	Age in years	Males	Females	Total	Percen-tage
1	0—1	2	2	4	13·3
2	1—2	3	Nil	3	10·0
3	2—3	3	3	6	20·0
4	3—4	2	1	3	10·0
5	4—5	1	Nil	1	3·3
6	5—6	Nil	Nil	Nil	Nil
7	6—7	1	Nil	1	3·3
8	7—8	3	Nil	3	10·0
9	8—9	Nil	1	1	3·3
10	9—10	2	Nil	2	6·7
11	10—11	1	Nil	1	3·3
12	11—12	1	1	2	6·7
13	12—13	1	2	3	10·0

TABLE II

Showing the etiological distribution of the cases

S. No.		No. of cases	Perce-tage
1	Infective hepatitis ...	8	26·7
2	Cirrhosis of liver ...	7	23·3
3	Tubercular granulomatous hepatitis ...	6	20·
4	Fatty liver of malnutrition ...	2	6·7
5	Extra hepatic biliary obstruction ...	1	3·3
6	Neonatal hepatitis ...	1	3·3
7	Congenital syphilis ...	1	3·3
8	Acute lymphatic leukæmia ...	1	3·3
9	Hepatic amœbiasis ...	1	3·3
10	Normal ...	2	6·7

Hepatic enlargement varied from 3—11 cm, the consistency in the majority of the cases (5 out of 8) being firm whereas in the remaining three the consistency was soft. Almost all th children had a tender liver.

Cirrhosis of liver.—Twenty-three percent of the cases (7 ou of 30) studied had cirrhosis of liver. The age incidence range from 11 months to 12 years. Five of these children were male and two were females. Presenting symptoms were distension o abdomen, anorexia and loss of weight in the majority of th cases. Most of the children (5 out of 7) were vegetarians. Physical examination revealed that by and large their weight was les than 10th percentile; growth pattern also indicated a simila trend. Hepatomegaly ranging from 3–5 cm. was found.

TABLE III

			Below 10th percentile No. of cases (Percent)	50th percentile No. of cases (Percent)	Above 90th percentile No. of cases (Percent)
1	Infective hepatitis	(8)	(a) Height	1 (12·5)	5 (62 5)	2 (25)
			(b) Weight	6 (75)	2 (25 0)	0 (0)
2	Cirrhosis of liver	(7)	(a) Height	3 (42·8)	3 (42·8)	1 (14·3)
			(b) Weight	6 (85·7)	1 (14·3)	0 (0)
3	Tubercular granulomatous hepatitis	(6)	(a) Height	5 (83·3)	1 (16 7)	0 (0)
			(b) Weight	5 (83·3)	1 (16·7)	0 (0)

Tubercular granulomatous hepatitis.—Six children, constituting 20% of the cases, had hepatomegalies due to tubercular granulomatous hepatitis. The age incidence ranged from 7 months to 7 years. Five of the children in this series were below three years of age. All the children had a history of loss of weight and persistent fever. Other presenting symptoms were not as common as these two although anorexia was found to be present to a greater degree.

Generalised lymphadenopathy was observed in three cases. In one case *pes-planus*, frontal bossing and hypotonia were noted. Hepatomegaly ranging from 3–6 cm was seen in all the cases. Both height and weight were below 10th percentile in five of the chidren. Acid fast bacillus was demonstrated in the sputum of one child and 'Mantoux test was positive in all with induration of more than 10 mm. Results of the hematological investigations like total and differential count and E. S. R. supported the diagnosis in each case. X-ray chest and liver biopsy finding revealed that all these six cases had tuberculosis as an etiological factor for enlarged liver.

Hepatomegalies due to miscellaneous etiological factors.—Nine children with hepatomegaly due to different etiological factors have been studied. Table IV shows the number of cases encountered under this group.

TABLE IV

Showing miscellaneous etiological factors

Diagnosis	No. of cases	Percentage out of 30 cases
1 Fatty liver of malnutrition ...	2	6·7
2 Extra hepatic biliary obstruction	1	3·3
3 Neonatal hepatitis	1	3·3
4 Acute lymphatic lenkæmia ...	1	3·3
5 Congenital syphilis ...	1	3·3
6 Hepatic amœbiasis	1	3·3
7 Normal ...	2	6·7

The two children with fatty liver of malnutrition were aged 1½ and 7 years with hepatic enlargement of 5 cm. in each case. Both the children had diarrhœa, loss of weight and complained of abdominal pain. Generalised œdema was also present. None had hair or skin changes nor mental apathy. Both the children weighed below the 10th percentile, growth impairment also was marked, and both were breast fed and were vegetarians. Total calorie intake was low.

The only case of hepatomegaly with hepatic amœbiasis was a child of 9 years who had a 5 cm. enlarged tender liver. Intercostal tenderness was also present. The child presented with complaints of anorexia, diarrhœa and pain abdomen; generalised œdema, loss of weight and angina were present in this child. A fresh stool examination revealed the presence of vegetative forms of amœbæ, cysts, charcot leyden crystals and occult blood. Height and weight were below 10th percentile.

One child with lymphatic leukemia was brought to the war in an unconscious and moribund condition with a history of feve hematemesis, malæna, bilateral parotid swellings. On examinatio the patient was found to be anæmic and not reacting to painfu stimuli, and with bilateral parotid swellings. The liver was tende and was felt 5 cm. below the right costal margin. The splee was enlarged to 3 cm. Blood smear examination revealed acut lymphatic leukemia. The patient expired half an hour afte admission and a post mortem liver biopsy was done.

A male child with congenital syphilis aged 3 month wa brought with a history of failure to thrive, fever and swellin of the left lip. On examination a maculopapular rash all ove the body, alopecia, hypopigmentation, sunken bridge of th nose, high arched palate, craniotabes and generalised lymphadenopathy were abserved. This was the first child in the family an the mother had no history of abortion in the past. Hepatomegal of 4 cm. was present and there was no splenomegaly. Blood fo VDRL and Kahn tests were positive. X-ray of the left hi showed osteocondritis and perichondritis of the femur.

One child aged 5 months with extrahepatic biliary obstructio was encountered in the present study. Jaundice was presen from the 10th day of birth and continued unremittingly. A distended abdomen and high coloured urine were present alon with vomiting. Stool was pale coloured. Liver was enlarged t 6 cm. and spleen upto 2 cm. There was no history of the mothe having received any drugs nor of any infections during pregnanc

One child aged 5 months had neonatal hepatitis, with an enlarged liver upto 3½ cm. High coloured urine, fever and jaundice were the presenting symptoms. There was no history of the mother having had jaundice and having received any drugs or injections during pregnancy. There was no history of umbilica sepsis in the neonatal period. Jaundice was present since birth fluctuating from day to day. Fever was present and the urine wa high coloured. Pale coloured stools was complained of while no bleeding diathesis was present. Blood V.D.R.L. test was negative, urine was positive for bile pigment and for urobilinogen.

A specific diagnosis could not be arrived at in two children of the present series who had hepatomegaly. They were age 9 years and 12 years respectively. One was male and the othe was female. Heights and weights were below 10th percentile i both the cases. Fever and vomiting were the presenting symptoms. One was a vegetarian and the other was a non-vegetarian No significant family history or history of past illness was pre sent. Hematological studies and chest skiagrams did not reve any abnormalities. The liver function tests were normal. Live biopsies showed normal lobular architecture and no other histological change indicating normal hepatic structure.

Discussion.—As per the present study hepatomegalies in infants and children seem to be most commonly due to infective hepatitis, cirrhosis of liver and tubercular granulomatous hepatitis. These three clinical entities alone accounted for 70% of all the cases studied. Fatty liver of malnutrition (6·7%) was the next common cause of hepatomegaly in the series. Other etiological factors like extra hepatic biliary obstruction, neonatal hepatitis, lymphatic leukæmia, congenital syphilis, hepatic amœbiasis leading to hepatomegaly were revealed in 33% each of the total number of cases.

Many of the symptoms of infective hepatitis are related to the gastrointestinal tract and this is the usual portal of entry of the virus. Sun Chung, Fresh (1964) reported an incidence of anorexia in 51% among the 303 cases of infectious hepatitis they studied. Chung, Moon *et al* (1964) found an incidence of anorexia in among 163 icteric patients studied, Anorexia was present in 87·5% of the cases in the present study and all these children were icteric. Findlay (1944) reported vomiting in 31·7% among 432 patients. The incidence of vomiting was 26% in Gordon's (1960) series. The reported incidence varies from 24% to 87% in different series. In the present series 7 out of 8 patients had vomiting making up an incidence of 87·5%. Fever was found to be the important sign noted in the present series, occurring in 87·5% of the cases. Finks and Blumberg (1945) found an incidence of fever of 61%.

The onset of cirrhosis of liver is usually slow and insidious the early symptoms being very vague and not specifically related to the disease. Most of the workers have agreed that the maximum incidence of the disease is between the ages of 1 and 3 years. The age distribution as reported by Merchant and Mukherjee (1952) as compared to the present study are given in Table V.

TABLE V

Showing age incidence of cirrhosis of liver

Age	No. of cases and % of total		
	Merchant	Mukherjee	Present study
0— 3 months	2 (3)	—	—
4— 6 months	10 (15)	40 (20)	1 (14·3)
7—12 months	15 (23)	—	—
1— 2 years	20 (30)	96 (48)	1 (14·3)
2— 3 years	10 (15)	41 (20·5)	2 (28·5)
3— 4 years	—	15 (7·5)	1 (14·3)
Over 4 years	9 (14)	8 (4)	2 (28·5)

Amarjit Singh, Jolly and Kumar (1961) reported that mos of the patients were between 1 and 3 years of age. During 4 years study covering over 250 cases, Achar and Chacko (195 reported that children in the group between 1 to 3 years we commonly affected Srivastava and Aikat (1954) Tirumurth and Radhakrishna Rao (1934) made similar observations. In th present study 57% of the cirrhotic children were below thre years of age, an observation which is similar to that of the othe workers. A greater incidence of cirrhosis in male children (71 than in female children (29%) was found in the present study Data published by the liver diseases subcommittee of I.C.M.R (1955) support this observation. Majority of the children in th present study (71·4%) were vegetarians.

The well known work of Radhakrishna Rao (1934), Narayan Murthi and Tirumurthi (1939) and of various other worker support this observation. The disease is predominant in Hind communities, majority of whom are traditionally vegetarian i their dietary habits.

Twenty percent of the cases with hepatomegaly in th present series had tubercular granulomatous hepatitis. Gupt *et al* (1972) have reported hepatic granuloma in 13% of the childre with hepatomegaly in tuberculosis. In the present study th majority of the children were males, though it is well know that there is no sex predilection in tuberculosis. Liver biops revealed focal granulomatous lesions in the liver composed o epithelial cells and surrounded by lympocytes suggestive of tubercular granulomatous hepatitis.

The incidence and the presenting symptoms of the childre with hepatomegalies due to miscellaneous etiological factors have been presented under observations. The diagnosis in each of these cases could be finally established on the basis of histopathologic study. Etiological factors like extra hepatic biliary obstruction neonatal hepatitis, lymphatic leukemia, congenital syphilis, and hepatic amœbiasis leading to hepatomegaly were revealed in 3·3 each of the total number of cases whereas fatty liver of malnutrition was found in 6·7% of the cases.

The present study gives a spectrum of the more common causes of hepatomegalies in infancy and childhood. Liver diseases are not uncommon in pædiatric practice and the incidence of different types in this area would be helpful to the practising physician. Further, the work shows that the etiological factor leading to hepatomegalies in this part of the country are similar to those found by various workers in other parts of India. In a vast majority of the cases with hepatomegalies, the diagnosis ca be made by a thorough clinical examination aided by simple investigation like serum A/G ratio and zinc sulphate turbidity as has been observed earlier by the authors (1974).

Summary.—Thirty children with hepatomegaly of varying etiology were studied with a view to assess the incidence and diagnosis. Infective hepatitis, cirrhosis of liver and tubercular granulomatous hepatitis were found to be the most common causes of hepatomegaly in infants and children in this part of the country. Poor socio-economic conditions and dietary habits appear to play an important role in the predisposition to the disease. A thorough clinical examination and a single determination of albumin globulin ratio and zinc sulphate turbidity would in the majority of cases, be of great use in the diagnosis. Liver biopsy however, is the final word in establishing diagnosis in hepatomegalies due to any etiological factor.

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THE BLOOD DONOR : BENEFIT *VS.* RISK

Q. What are the benefits *vs* risks associated with donating blood ? Is the frequent blood donor more at risk than the one-time donor? Does frequent blood donation increase the possibility of a subsequent blood dyscrasia ?

A. The primary risk of frequent blood donation derives from the approximately 200 mg. of iron lost with each unit given. Although predonation hemoglobin determinations prevent depletion of iron to the extent that anemia results, iron stores will be exhausted before the hemoglobin falls. The risk of iron deficiency is obviously greater in women. The only other noteworthy risk is a transitory fainting reaction, most probably psychogenic in origin, and such a reaction is restricted primarily to first-time donors. There is no evidence that frequent blood donation increases the possibility of a subsequent blood dyscrasia.

The most obvious benefit of blood donation comes from the satisfaction of helping one's fellow man. There may also be a potential physical benefit from the modest fall in hematocrit reading that results, especially for donors with hematocrit readings in the high normal range. As far back as 1962, Burch and DePasquale pointed out that angina and myocardial infarction were more common in the presence of higher hematocrit readings. They also reported that three patients with angina had a reduction of symptoms when blood was removed until the hematocrit reading was 45%. —(*J.A.M.A.*, 3rd Nov. 1978).

INCIDENCE OF URINARY TRACT INFECTION IN CHRONIC DIARRHOEAS IN THE PEDIATRIC AGE GROUP*

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INTRODUCTION :—**Aim and scope of study.**—Chronic diarrhoea i one of the leading causes of morbidity and mortality in children Parenteral diarrhoeas in the new born are predominantly due t urinary tract infection. Studies regarding urinary tract infectio in chronic diarrhoeas have been few. The present study deal with the incidence of urinary tract infection in chronic diarrhoeas in the paediatric age group, excluding the new born Apart from this, the role of worm infestation and sugar intoleranc are also incidentally identified.

Material and methods.—One hundred children who wer admitted for diarrhoea of more than 15 days duration, as well as those who were readmitted in the diarrhoea wards of the Institute of Child Health and Hospital for Children, Egmore Madras, were taken up for the study; the new born were excluded

The cases were seen in the diarrhoea wards daily till their discharge from the hospital. Specimens of urine were collected under aseptic precautions. In boys and girls, a mid stream sample of urine was caught by "clean catch" method and in young female infants a sterile receptor was used to collect the urine. Urine analysis with reference to macroscopic, microscopic and culture tests, was done. Urine samples were sent for culture on three consecutive days. A routine motion examination for macroscopic, microscopic, and culture test and for reducing substance was also done in all the cases.

Other investigations like enteric culture, nonenteric culture Mantoux test, CSF culture, X-ray chest and abdomen were done for the presence of an identifiable focus of infection. Blood samples for electrolytes was sent in almost all the cases and in severe cases urea and creatinine levels were estimated.

OBSERVATION :—

TABLE I

Showing the symptoms and signs in positive U. T. I.

Symptom and signs	No. of cases	Percentage	Symptom and signs	No. of cases	Percentage
1 Diarrhoea ...	65	100	8 Anorexia ...	24	36·9
2 Fever ...	46	70·77	9 Convulsions ...	13	20
3 Failure to thrive ...	44	67·69	10 Haematuria ...	10	16·3
4 Irritability ...	36	55 38	11 Enuresis ...	4	6·1
5 Vomiting ...	35	53·85	12 Jaundice ...	3	4·
6 Dysuria ...	27	41·54	13 Turbid urine ...	2	3·
7 Foul smelling urine	26	40	14 Abdominal mass ...	1	1·

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*Specially contributed to the 'ANTISEPTIC'.

TABLE II

Showing the age and sex incidence of U. T. I.

Age	No. of cases	Percentage	Male		Female	
			No. of cases	Percentage	No. of cases	Percentage
1–3 months	11	16·92%	8	72·73%	3	27·27%
4–6 months	15	23·08%	10	66 67%	5	33·33%
7–12 months	22	33 85%	8	36·36%	15	68·18%
1–2 years	9	13 85%	3	33 33%	6	66 67%
2–6 years	6	9 23%	2	33 34%	2	66·66%
6–10 years	2	3·08 %	Nil	Nil	2	100%
10–12 years	Nil	Nil	Nil	Nil	Nil	Nil
Total	65	100%				

Overall sex incidence:—Male : 46·15% Female: 53·85%

TABLE III

Showing the organisms grown in urine on culture

No.	Organism	1–6 M	7—12 M	1—2 years	2—6 years	6—10 years	10 12 years	Total	%
1	E. Coli ...	18	9	8	2	1	—	38	58·46
2	Klebsiella ...	11	6	6	5	1	—	29	44·62
3	Proteus ...	—	4	1	—	—	—	5	7·69
4	Enterobacter ...	3	2	—	—	—	—	5	7·69
5	Pseudomonas ...	—	1	—	—	—	—	1	1·59
6	Candida ...	—	1	—	—	—	—	1	1·59

TABLE IV

Showing the single and mixed organisms grown in urine

No.	Organism	Single		Mixed		Total	Total %
		No. of cases	%	No. of cases	%		
1	E. Coli ...	34	52 31	4	6 15	38	58 46
2	Klebsiella ...	22	33·85	7	10·77	29	44·62
3	Proteus ...	3	4·62	2	3 08	5	7 69
4	Enterobacter ...	5	7·69	—	—	5	7 69
5	Pseudomonas ...	—	—	1	1·54	1	1·54
6	Candida ...	1	1·54	—	—	1	1·54
	Total ...	65		14		79	

TABLE V

Showing the incidence of worm infection in urine culture positive cases

No.	Worms	Age					Total	%
		6—12 months	1—2 years	2—6 years	6- 10 years	10—12 years		
1	Giardiasis ...	2	1	1	—	—	4	6·15
2	Ascariasis ...	—	1	3	1	—	5	7 69
3	Entamoeba histolytica	—	—	—	—	—	—	—
4	Trichuris ...	—	—	—	1		1	1·59
5	Trichomonas ...	1	1	—	—	—	2	3·08

TABLE VI

Showing the socio-economic status of the patients

Income per month (Rupees)	No. of cases	Percentage
Below 200	29	44·62
200–300	21	32·31
300–500	8	12·31
Above 500	7	10·77

TABLE VII

Showing the nutritional status in U. T. I.

Nutritional status	No. of cases	Percentage
Undernourished	8	12·31
Marasmus	22	33·85
Marasmics-Kwashiorkor	4	6·15
Kwashiorkor	2	3·08
	36	55·39

TABLE VIII

Common organisms grown in motion and urine

No.	Organism	Motion	Urine	Total	Perce-tag
1	E. Coli	10	10	10	
2	Klebsiella	6	6	6	15·
3	Proteus	—	—	—	8
4	Enterobacter	—	—	—	-
5	Pseudomonas	—	—	—	-
6	Candida	—	—	—	-

TABLE IX

Showing the incidence of sugar intolerance urine culture positive cases

Sugar intolerance	Male	Female	Percen-
Lactose ...	1	2	4·6
Sucrose ...	1 (same as below)	—	1·64
Glucose ...	1 (same as above)	—	1·64
Total ...	4	2	6·15

Discussion.—Management of chronic diarrhœa poses a serio problem especially in young infants, both in diagnosis and trea ment. Urinary tract infection which is common in children very much underdiagnosed partly because the children are unabl to localize their symptoms to the urinary tract and partly to th varied symptomatology, especially in young children. Diarrhœ is one of the commonest symptom of the U.T.I. and with th in mind this study was conducted in 100 children admitted in the hospital.

Age incidence:—In this study children between 1 mont to 10 years were found to have the urinary tract infection maximum incidence was between 6 months to 12 months and general decline was observed after the age of 12 months. (Table I Incidence of U.T.I. between 1–12 months 73·68%; and betwee 6 months–12 months 52·63%.

Sex incidence (Table I):—The overall sex incidence in male was 46·15% and females was 53·85%. The ratio of male to femal is 1 : 1·5%. This is in contrast to Dr B. R. Santhanakrishnan study of U.T.I in infants with recurrent gastro-enteritis whe the male : female sex incidence ratio was 1 : 3. This higher rat in the latter study was probably because children under 2 yea of age only were included in the study.

Nutritional status (Table VII):—Undernourished 12·31 marasmus 33·85%; marasmic kwashiorkor 3·08%.

A total of 55·39% were nutritionally deficient and marasmus is one of the notable features.

Socio-economic status (Table VI):—There is a high incidence of the illness (44·62%) in the low socio-economic status of less than Rs. 200/- month. This high incidence is due to obvious undernutrition, poor perineal hygiene and poor toilet training.

Organisms:—*E. coli* was the commonest organism isolated in this study. This is clearly shown in Table III, IV and VIII. E. coli tops the list in single mixed infections in urine and found commonly in urine and motion. Dr. B. R. Santhanakrishnan in his study documented 47·36% of E. coli, incidence while Dr. Sheela Ethiraj *et al* observed 54% of E. coli, infection in their "Critical study of U.T.I. in pædiatric age group". E. coli incidence in this study is 52·31%. The second organism grown is Klebsiella and the incidence is 33·85% when compared to Dr. B. R. Santhanakrishnan and Dr. Sheela Ethiraj *et al* who observed 5·26% and 13% respectively.

Proteus, Enterobacter:—These two organisms share an equal incidence of 7·69% when compared to the high incidence of 21·05% for proteus and 10·52% for enterobacter in Dr. B. R. Santhanakrishnan's study and lower incidence in the study Dr. Sheela Ethiraj *et al* in their study of only 2%.

Worm infestation:—(Table V)—The incidence of worm infestation is 18·46% out of which ascariasis forms 69%, giardiasis 6·15%, trichomonas 3·08% and trichuriasis 1·54%.

Sugar intolerance:—(Table IX)—Incidence of sugar intolerance from observation of 165 cases is 6·15%.

Conclusion.—100 chronic cases of diarrhœa of more than 15 days duration and readmission cases were taken up for study. Out of these, 65 cases were positive for urinary tract infection proved by a positive urine culture. The sex incidence among males is 46·15% and females is 53·85%. The gross incidence is 65%.

(*a*) 16 cases had the same organism cultured in urine and motion forming 24·61%, (*b*) 12 casses had worm infestation forming 18·46%, (*c*) 4 cases had sugar intolerance forming 6·15%.

The above three conditions were detected from the gross incidence for the 'Chance contaminations' and probable etiological factors. Therefore the net incidence of urinary tract infection in this study of chronic diarrhœa will be 40·39%.

The maximum incidence of urinary tract infection in this study is between 1—12 months of age forming 73·85%; of this 33·85% occurred between the age of 6—12 months. There is a general decline after the age of 1 year.

E. coli was the commonest organism isolated forming 51·31% followed by Klebsiella (33·85%). Marasmus was seen in 33·85% of children. 76·93% of children came from low socio-economic group. (Below Rs. 300/-).

Taking a fairly high incidence of 40·39%, it is worth investigating all cases of chronic diarrhœa of more than 15 days duration and in those readmitted for same. This will help not only in establishing the etiology but in preventing further damage to the urinary tract and renal system leading to poor progress in the health of the children. Hence exclusion of urinary tract infection should be a routine in all these cases.

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TREATMENT OF ACUTE MYOCARDIAL INFARCTION WITH SODIUM NITROPRUSSIDE

In 12 patients with acute myocardial infarction, seven with high an five with low blood pressure measurements, sodium nitroprusside infusion were given to reduce myocardial oxygen consumption. The dose w between 20 and 300 μg/min. Sodium nitroprusside led to a considerabl reduction of the systemic arterial pressure, while the left ventricular filling pressure was less influenced. In normotensive patients the filling pressur often could not be sufficiently lowered due to too severe reduction of arteria pressure occurring beforehand. In hypertensive patients the relationship bet ween left ventricular filling pressure and arterial pressure was better. In a patients the arterial pressure could be lowered to normal values and th filling pressure also became normal in most cases. Patients with angin pectoris improved markedly. Sodium nitroprusside has a satisfactory effect on hemodynamics in hypertensive infarct patients but is less suitabl for the treatment of normotensive or hypotensive patients. – (*J.A.M.A.*, 19th May, 1978).

ENDOSCOPIC REMOVAL OF AN ULCERATED APPENDICEAL STUMP

Inverted appendiceal stump is part of the differential diagnosis of radiologically demonstrated caecal mass in patients after appendectomy. After appendectomy, the roentgenographic differential diagnosis of a caecal filling defect includes inverted appendiceal stump as well as inflammatory o neoplastic processes. Colonoscopy has increasingly become routine in co firming the nature of this roentgenographic finding, and removal of th stump has been achieved through the endoscope. A three month follow-up including repeated caecoscopy, has shown complete healing and subsidence of the abdominal pain. No evidence of phialophora infection elsewhere i the body has occurred. Phialophora infection is usually described involving skin or subcutaneous tissues and is generally associated with puncture or establishment of the fungus in a previous wound.—(*J.A.M.A.* 21st July, 1978).

TREATMENT OF CEREBRAL OEDEMA*

RESULTS OF A COMPARATIVE STUDY USING 10% MANNITOL PLUS GLYCEROL (*MANILINE*) AND 20% MANNITOL ALONE

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INTRODUCTION :—In the majority of patients dying of cerebrovascular accidents, the cause of death is extensive cerebral œdema. A variable amount of cerebral œdema accompanies cerebral infarction. With large infarctions the œdema may be so extensive that the portion of the swollen hemisphere shifts under the falx cerebri or down through the tentorium cerebelli. This change in intracranial space relationship further impairs the flow of blood and flow of cerebrospinal fluid, thus increasing the ischæmia and neurologic deficit. This is often followed by secondary congestion and ischemia of the upper brain stem which is almost invariably fatal.

In the treatment of cerebral infarction the aim is to achieve four goals (*a*) to preserve life, (*b*) to limit the amount of brain damage (*c*) to lessen disability and deformity and (*d*) to prevent recurrences. Efforts are usually directed towards maintaining a clear airway, an adequate fluid, electrolyte and calorie intake and adequate urine output. Constant care is taken to protect the skin from ischemia and necrosis resulting from pressure.

In patients with hemisphere infarction, cerebral œdema can impair consciousness and vital functions in the course of the illness; when cerebral œdema subsides the patient may again be able to cough, and swallow. Hence the main aim of treatment should be to reduce the cerebral oedema. Hypertonic urea solution 1 to 1·5g/kg. body weight rapidly reduces cerebral oedema and causes marked diuresis. The effect is transient and a rebound effect attributed to recurrence of swelling has been reported. On the other hand, rebound oedema is much less with mannitol, glycerol and sorbitol. Steroids rapidly reduce the cerebral oedema but its use has to be restricted due to the danger stress ulcers and gastric bleeding which are very common in cerebrovascular accidents.

Mannitol has been extensively used as a safe osmotic diuretic and has stood the test of time. Mannitol is hexahydric alcohol. After intravenous administration almost all of the mannitol infused appears unchanged in 3 hours in the urine. The diuresis is induced by elevating the osmolarity of glomerular filtration and thus blocking the tubular reabsorption. The excretion of sodium and chloride is also increased. Seventy-five grams mannitol can be given I.V. with safety.

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* Specially contributed to the 'ANTISEPTIC'

Mannitol has been extensively used as intravenous infu in various clinical conditions *e.g.*, raised intracranial pressure a ciated with cerebral oedema, toxaemia, of pregnancy, and flush of kidneys in post-operative and other types of anuria. Manni brings down the cerebral oedema and intracranial pressure neurosurgical operations. It has been used to eliminate pois in cases of self poisoning.

The most commonly used concentration of mannitol is 20% solution. At this concentration, it is partially crystalliz Therefore the solution should be warmed to dissolve the cryst before the solution can be used. This is the main disadvantage using mannitol solutions with a concentration of 20% or higher

Glycerol and sorbitol has been recommended as an alternat osmotic diuretic to mannitol. Unlike mannitol, glycerol freely soluble in water. Considerable quantity of glycerol slowly metabolised by the body for meeting the caloric nee Besides being a diuretic, this also serves as a useful source energy. It does not exhibit any toxic reactions even in hi doses. The onset of diuresis is slow, but more sustained.

By combining these two osmotic diuretics, 10% manni and 10% glycerol the advantage is one of obtaining the sa osmotic activity equivalent to 20% solution of either compon without any risk of crystallisation. Further, glycerol is a sou of calories too.

We took up the study of 103 cases of cerebrovascular accide of which 52 cases were treated with IV 10% glycerol and 1 mannitol and 51 cases with 20% mannitol alone.

Material and methods.—1. *Selection of patients*:— patients with a sudden onset of loss of consciousness with f neurological signs or with evidence of subarachnoid haemorrh were taken within 24 hours of admission. Patients suffering fr head injury and cerebrovascular accidents complicated by ot diseases like diabetes mellitus, renal failure etc., were exclud Most of the selected patients were from the Intensive Medi Care Unit and hence a close follow-up was easy.

2. *Drug administration*:—After preliminary clinical bio-chemical investigations, the patients were assigned to rece either maniline or mannitol through a random selection. Al them received either 350 cc. of maniline or 350 cc. of 20% man tol for a period of five consecutive days or less. Other anti dema measures like steroids, frusemide etc., were avoided both the groups of patients. The usual intensive care for conscious patients like attention to hydration and electro balance, bowel and bladder care, control of infection etc., given.

3. *Evaluation:*—On admission, on 3rd and 5th days patients were scored according to pattern methods adapted as in Parkinson Disease Research Foundation as detailed below :

NEUROLOGIC STATUS EVALUATION

Mental function :

A. Orientation :

0. Fully
1. Slight impairment
2. Mild impairment
3. Moderate impairment
4. Severe impairment
5. Complete disorientation
6. Cannot appraise.

B. Recent recall :

0. Normal
1. Slight impairment
2. Mild impairment
3. Moderate impairment
4. Severe impairment
5. Completely impaired

C. Digit Span :

0-6 Backward
1-5 Backward
2-4 Backward
3-3 Backward
4-2 Backward
5-1 Backward

D. Remote memory :

one pt for each incorrect

1. Year of birth
2. Place of birth
3. Parent's name
4. Occupation
5. Size composition of family.

Motor function :

(score each extremity seperately)

0. Normal
1. Useful but not normal
2. Semiuseful
3. Moves against gravity
4. Feeble non-useful movements only
5. Plegic.

Aphasia :

0. Normal
1. Slight
2. Mild
3. Moderate
4. Severe.
5. Complete

Apraxia :

0. Normal
1. Slight
2. Mild
3. Moderate
4. Severe
5. Complete

Totals :—Total disability scale :

Circle : 1 2 3 4 5 6 7 8 9 10

overall clinical impression of current status :

Mild Stroke............................
Moderate Stroke.....................
Severe Stroke.......................

The CSF pressure was measured with a manometer on the 1st and 5th day. Urine output was measured on three consecutive days and serum sodium estimated before and after therapy. The patients evaluation also included, history, physical examination, complete blood count, sedimentation rate, blood sugar, urea, serum sodium, potassium, bi-carbonate, chloride, E.C.G. urine analysis.

Results:—In the cases studied, the sex and age groups were as follows:—(*see* Table)

Table I

Showing the sex incidence

Sex Incidence	Maniline		Sex Incidence	Mannitol	
	Male	Female		Male	Femal
Improved ...	24	16	Improved ...	21	13
Worse ...	2	2	Worse ...	9	5
Same ...	5	3	Same ...	1	2
Total ...	31	21	Total ...	31	20

Table II

Showing the age incidence

Maniline					Mannitol				
Age Groups	No. of cases	Impro-ved	Worse	Same	Age groups	No. of cases	Impro-ved	Worse	
10— 20 ...	1	1	—	—	10— 20 ...	—	—	—	—
21— 30 ...	—	—	—	—	21— 30 ...	2	1	1	—
31— 40 ...	4	2	2	—	31— 40 ...	6	3	3	—
41— 50 ...	8	6	1	1	41— 50 ...	12	8	4	—
51— 60 ...	14	12	—	2	51— 60 ...	16	13	3	—
61— 70 ...	15	11	1	3	61— 70 ...	14	8	3	[illegible]
71— 80 ...	6	5	—	1	71— 80 ...	1	1	—	—
81— 90 ...	3	2	—	1	81— 90 ...	—	—	—	—
91—100 ...	1	1	—	—	91—100 ...	—	—	—	—

It will be noted that incidence is more common in men a in 5th and 6th decades while the response to therapy is similar both men and women.

Types of cases and results:—Maniline was administered in cases of cerebral thrombosis with infarction where as mannit in 40 cases of the same condition. Maniline was tried in 26 cas of subarachnoid hæmorrhage including intra cerebral hæmorrha whereas mannitol was used in 11 such cases.

Table III

Showing the results

	Maniline				Mannitol			
	Total	Impro-ved	Worse	Same	Total	Impro-ved	Worse	Same
Cerebral thrombosis and infarction ...	26	22	2	2	40	31	7	[illegible]
Subarachnoid hemorrhage or intracerebral hemorrhage ...	26	18	2	6	11	3	7	1

It was noted that percentage of improvement is more wi maniline and further the improvement was much quicker a lasted longer. None of the patients developed pulmona œdema or cardiac failure after maniline or mannitol therapy.

It is noted that in majority of cases the urine output was increased with both mannitol and maniline treatment.

TABLE IV

Showing the urine output

Urine output		Maniline	Mannitol
Increased	...	41	45
Decreased	...	8	3
No change	...	3	3

TABLE V

Showing the serum sodium levels

Serum sodium		Maniline	Mannitol
Increased	...	1	3
Decreased	...	0	1
No change	...	51	47

It will be noted that there is no significant fall in serum sodium in both types of treatment except in one case where it showed hyponatremia.

Improved of conscious level with in 24 hours

		Maniline	Mannitol
Total No. of cases treated	...	52	51
Total No. of improved according to scoring	...	40	34
Total No. of improved according to scoring within 24 hours	...	10	None
Percentage of overall improvement	...	77%	67%

It was noted that the improvement in conscious level was much quicker with maniline than with mannitol.

Some interesting observations.—On careful questioning we found that in the majority of cases of subarachnoid or intra cranial hemorrhage, there was a history of vomiting and headache preceding the attack. In stroke, during the acute phase we expected the tendon reflexes to be absent on the affected side. But it was observed that tone was increased and tendon reflexes were brisk in most of the cases of intracerebral hemorrhage on the hemiplegic side.

In appropriate secretion of antidiuretic hormone is known to occur in cerebral œdema and was seen in only one case in which the serum sodium level was 110 mEq/L and urine output was 3000 CC.

CSF pressure was found to be high (over 18cm of CSF) in most of the cases of subarachnoid hemorrhage and came down with treatment with either mannitol or maniline.

Discussion.—A comparative study of treatment of cerebral œdema in cerebrovascular accidents with mannitol with glycerol (Maniline) and mannitol alone was made. There was a significant improvement in cases treated with maniline which was quicker and more sustained. Out of cases treated with maniline the percentage of improvement was 77 and with mannitol it was 67.

In patients with initial high scoring of 36–40, 10 out of cases showed improvement with maniline whereas none wi mannitol.

Therapeutically maniline appears to be preferable to mannitol due to better response obtained in treatment of cerebra œdema. Further, the risk of crystallisation was absent in th combination package of 10% mannitol and 10% glycerol, where crystallisation is very common with 20% mannitol alone. Glycerol also has nutritive value and provides calories to the body.

Summary —A comparative study of the effect of I. V. glycerol 10% pl mannitol 10% (maniline) with mannitol 20% alone on acute stroke was conducte at the IMCU, Govt General Hospital, Madras. It was noted that the effect wa quicker and lasting longer in the combination package than with manni alone. The definite advantages of 10% glycerol and 10% mannitol over 20 mannitol are that crystallisation does not occur with the former solution a that glycerol has a nutritive value and is used by the body for its calori needs.

Acknowledgement —We are grateful to M/s Unichem Lab. and M/s Gan pathy and Co. Madras for the liberal supply of Maniline for conducting this tria

We are greatful to the Director of Medical Education and Dean, Govt General Hospital, Madras-3 for permitting us to conduct this trial.

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FLAGYL THERAPY IN PROPHYLAXIS AND TREATMENT OF ANÆROBIC INFECTIONS IN GYNÆCOLOGICAL SURGERY*

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INTRODUCTION :—Even with the best of techniques many patients undergoing gynæcological surgery develop pelvic infections. The rate of infection is particularly high in vaginal operations as compared with other types of surgery. Prophylactic antibiotic therapy in gynæcological surgery has often delayed complications, such as sepsis due to anærobic infections (Pitkin and Scott, 1976). As the normal bacterial flora of the female genital tract consists mainly of obligate anærobes, we thought it would be worthwhile to conduct a trial with a drug which acts specifically against this group of organisms.

We therefore administered metronidazole (Flagyl) as an anti-anærobic agent prophylactically to 300 patients undergoing medical termination of pregnancy and/or vaginal tubectomy and compared the results with an equal number of patients undergoing similar surgery who received conventional antibiotics like tetracycline or oral ampicillin.

Material and methods.—The study was carried out at the post-partum centre of the institute of medical sciences, Banaras Hindu University from January 1978 to January 1979. Six hundred patients selected for suction termination of pregnancy and/or vaginal tubectomy were included in this study. The patients were placed in the following groups :—

Group A (Prophylactic group)—300 patients :—These patients received metronidazole ('Flagyl') 400 mg. three times daily on the day of admission, *i.e.* a day before the planned operation and the therapy was continued till the 7th post-operative day.

Group B (Control group)—300 patients :—This group of patients received oral antibiotics (tetracycline/ampicillin) in a dosage of 250 mg. six hourly daily for the same duration as in the prophylactic therapy in (Group A).

Group C (Complicated group)—9 patients :—Patients who developed post-operative complications inspite of the prophylactic antibiotic therapy in group 'B' were included in this group and they were treated with 'Flagyl' in the dosage of 400 mg. three times a day for 7 days.

---

* Specially contributed to the 'ANTISEPTIC'.

A full clinical examination, routine estimation of hæmoglobin and urine analysis for sugar and protein was carried out on all patients at admission, and on the 7th post-operative day.

The general condition of the patients and the side-effects due to the drug if any were recorded daily, in each case, in the printed *pro forma*. Besides clinical examination, pre-operative and post-operative studies of high vaginal swabs were carried out to investigate the vaginal carriage rate of anærobes and to ascertain the prophylactic value of the drug against them. The characteristic appearance on gram staining and the production of gas in Robertson's Cooked Meat Medium were taken as the criteria for the presence of anærobes. Due to lack of facilities, further anærobic culture could not be carried out to confirm the findings. Vaginal smears of all patients were also examined to detect the incidence of symptomless trichomonal infections.

Results and observations.—Clinically all the patients of the prophylactic group (Group 'A') remained in an excellent condition except 36 patients (12%) who complained of loss of appetite and nausea. There were no cases of apparent infections in this series, although vaginal swabs showed the presence of anærobic organisms post-operatively in 3·6% cases. In the antibiotic group (Group 'B') the drug was better tolerated post-operatively, but the vaginal swab revealed the presence of anærobic organisms in 88 cases (29·3%) with apparent infection in 9 cases out of which three patients (1%) developed a pelvic inflammatory mass. The vaginal smear examination for trichomonal infection revealed the existence of the flagellate in symptomless states in 66 patients out of 600 patients (11%) pre-operatively, while post-operatively the incidence was found in 15 cases (5%) of the antibiotic group only. The vaginal carriage rates of anærobes in the two groups, on the basis of their characteristic appearance on gram-staining and the production of gas in Robertson's Cooked Meat Media revealed a high percentage of anærobes in the pre-operative period in both the groups which was reduced remarkably after administration of metronidazole (Group 'A') in the post-operative period with a reduction of the incidence of post-operative complications (Table II).

TABLE I

Showing the vaginal carriage rates of anaerobes among 600 gynæcological patients

Group	No. of patients	Detection of anærobes in high vaginal swabs			
		On admission		On 7th post-operative day	
		Present	Absent	Present	Absent
A	300	229 (76·3%)	71 (23·6%)	11 (3·6%)	289 (96·3%)
B	300	206 (68·6%)	94 (31·3%)	88 (29·3%)	212 (70·7%)
C	9	9 (100%)	— —	— —	— —

Note :—Group 'C' indicates the treatment failures of the antibiotic group where anærobic infection was detected clinically and which was supported by smear examination after 5 or 6 days of antibiotic therapy.

TABLE II

Showing the incidence of post-operative infection

Group		Total No. of cases	Infection
A	...	300	Nil
B	...	300	9

Discussion.–The non-sporing anærobes constitute a large portion of the bacterial flora of the female genital tract, where they far outnumber the ærobic organisms. Gorbach, Menda, Thadepalli, *et al* (1973) isolated obligate anærobes from the cervix of 70% healthy women and bacteroides were present in 57% of their specimens. Willis (1975) demonstrated a pre-operative carriage rate of non-clostridial anærobes in 45% cases who underwent hysterectomy or vaginal repair. These organisms under certain circumstances invade the tissue with the production of abscesses or enter the blood stream resulting in septicæmia (Dack, 1940). The most commonly encountered anærobic organisms are *B. fragilis*, *B. melaninogenicus*, anærobic streptococcus, etc. It has been observed that while some anærobic organisms are susceptible to several antimicrobial agents, the organisms most commonly encountered in clinical infection are usually resistant to penicillin (Garrod, 1955; Finegold, 1967). Resistance of these organisms to tetracycline (Kislak, 1972; Okubadejo, *et al*, 1973) and ampicillin (Kislak, 1972) is also quite common Chloramphenicol, lincomycin and clindamycin are usually effective against anærobic organisms. The bone marrow toxicity of chloramphenicol and the tendency to produce pseudomembraneous colitis with lincomycin and clindamycin restricts their use for prophylactic purposes. The bactericidal action of 'Flagyl' against anærobic organisms has been demonstrated by Davis, McFadzean and Squires (1964) and by Freeman, McFadzean and Whelan (1968). Metronidazole has the advantage that it does not interfere with the action of the commonly used antibiotics. In a comparative study of tetracycline, clindamycin, rifampicin vancomycin and metronidazole, it has been shown that only metronidazole had a complete and consistent bacterial action against anærobes at a concentration easily attainable in the serum.

In our series 76% high vaginal swabs in Group 'A' and 68% in Group 'B' indicated the presence of anærobic bacteria pre-operatively (Table I) which is slightly higher than the series of Gorbach, Menda and Thadepalli (1973). But this can be explained due to the different social background of our cases. The results of a study of the vaginal swab post-operatively in this series showed a significant difference in the two groups of cases. In the 'Flagyl' group (Group 'A') only 3·6% of the cases revealed the presence of anærobes as compared to 29·3% in the antibiotic group (Group B). This reduction in the carriage rate of anærobes was reflected in the absence of post-operative infection in the 'Flagyl treated group, as compared with a 30% infection rate in the an biotic treated series.

Willis (1975) also reported in a study of 202 patients who h elective gynæcological surgery, a pre-operative vaginal carria rate of 45% which dropped down to 6 per cent post-operativ in patients who received 'Flagyl' prophylactically while increased to 65 per cent in the control group. It was furth observed that the incidence of post-operative anaerobic infecti was 18·6 per cent in the unmedicated control group while in comparable group of cases where prophylactic treatment wi metronidazole was instituted, the incidence of such infection w virtually absent. Only one patient out of 100 cases, develope anaerobic infection 4 weeks after the operation.

In this study it was established that prophylactic antibiot therapy, though well tolerated, is often complicated with t delayed development of sepsis; which is not observed if "Flagy is used along with the conventional antibiotics. "Flagyl" h another advantage over the antibiotics, as it also eradicates t trichomonal infection which may otherwise remain untreat in sub-clinical states.

The dosage schedule of "Flagyl" 400 mg. three times a d starting 24 hours before the planned operation appears to adequate. The same dosage schedule was tried in 9 patien who developed post-operative infection despite prophylact antibiotic therapy but the therapy was found to be successf in 66% cases only. Perhaps, in cases of established infection, loading dose of 2 gms. to start with, followed by 400% mg. thri daily may improve the results.

Summary and Conclusion.—1. A study was carried out in 600 patie who underwent suction termination of pregnancy and/or vaginal tubectomy.

2. The vaginal carriage rate of anaerobes was 72% on an average p operatively which was reduced to 3% in the "Flagyl" treated group and 29 the antibiotic treated series.

3. In the "Flagyl" treated group there was no incidence of p operative infection, while 3% cases in the antibiotic group developed p operative sepsis.

4. Vaginal smear examination revealed the presence of the flagell in 11% symptomless cases pre-operatively which was completely eradicated prophylactic "Flagyl" therapy while the presence of flagellate was noticed 5% cases of the antibiotic group post-operatively.

5. Tolerance was good in the antibiotic series while 12% of the ca developed loss of appetite and nausea in the "Flagyl" treated group.

Acknowledgement.—We acknowledge with grateful thanks the help received from M/s May and Baker (India) Private Ltd., Lucknow, in conduct this trial. We are also extremely obliged to Dr. S. C. Ray, Medical Consulta for his technical help. The authors and the Institute of Medical Scien would like to thank Mr. R. P. Grover and Mr. A. K. Neogi also for t constant encouragement and help provided in completing this work.

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AUTONOMIC NEUROPATHY AND PAINLESS MYOCARDIAL INFARCTION IN DIABETIC PATIENTS

Myocardial infarction is considered the prime cause of death among adult diabetic patients. In a great number of cases, during myocardial infarction, the patients don't feel pain or it is atypical. Diagnosis can be neglected and mortality increases. In search of an explanation for the absence of pain in these patients, the authors studied the autonomic nerve fibers of the heart muscle with argentic and combined techniques, looking for lesions in the sympathetic or parasympathetic nerve fibers that conduct pain. In five cases of painless myocardial infarction studied, the nerve fibers showed typical lesions of diabetic neuropathy ; beaded thickenings, spindle-shaped thickenings, fragmentation of fibres and diminution of the number of nerve fibers. The patients in the control group (five diabetics with painful infarction five diabetics without infarction, five nondiabetics with painful infarction, and five non-diabetics without infarction) had no lesions. The absence of pain in diabetics with myocardial infarction could be due to a lesion of the afferent nerves which conduct pain.—(*J.A.M.A.* 19th May 1978).

WHICH BIRTH WEIGHT STANDARD ?

Babies of low birth weight have always been recognised as being at special risk, not only of dying but of sustaining long-term physical and neuropsychological impairement. Some communities seem to have relatively low birth weight babies and a "prematurity rate" based on the fixed standard of 2500 g. (5½ lbs.) gives a misleadingly pessimistic view and a low birth weight can indicate not only a shorter period of gestation but impaired intra uterine growth, two circumstances, likely to have both different causes and different prognoses. It is noticed that babies of Indian extraction are likely to be much smaller than those of European or African stock, for there appears to be a real ethnic difference in fetal growth even allowing for the small size of the mothers.

The data based on 1723 births, showed that Indian babies weighed about 300 g. less than the white European, with West Indians in between. Some 80% of Indian babies fell below the 50th centile and 25% below the 10th centile. When a correction was made for maternal size the Indian and West Indian infants came together to lie some 190 g. below the white babies at each gestational age. Accepting a different standard for infants of Indian origin implies the assumption that the lower 10% of these infants by that standard, but as Thomson said "it should be assumed without actual demonstration that this implies equal degrees of liability to neonatal or subsequent handicaps" More information is needed for appropriate birth weight standards can be established for are different groups in our hetorogeneous population.—(*British Medical Journal*, 18th November, 1978).

A CLINICAL TRIAL WITH *GERIFORTE**

(An Indigenous Geriatric Tonic)

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INTRODUCTION :—The progress of modern medicine has increa the longevity of man. This gain, however, has led to increase in geriatric problems. Geriforte, a geriatric tonic (Hi laya Drug Co.) which contains non-hormonal herbal ingredie and which is claimed to restore the general health of the elde has been recently introduced in the market. It is reported be a comprehensive remedy for relief of the physical and physic gical problems which arise during the normal aging process. Ge forte has been tried in various geriatric problems like senile d matoses, hyperlipidæmia, and in various chronic and debilitati diseases, with encouraging results. The pharmacodynamics Geriforte have been studied in animals as well as in man. T drug is reported to have no illeffects on smooth muscles, nor d it react with autonomic transmitters. The effect on the horm nal balance has been found to be interesting: although Gerifo does not change the total concentration of testosterone, t amount of free hormone available to the tissue is increased.

The present study was undertaken to evaluate the efficacy Geriforte in patients with neurosis and other minor functio disorders. However, cases with major psychosis were exclud

Composition of Geriforte

Each Geriforte tablet contains :—

Chyavanprash concentrate	100 mg	Shilajeet (Purified)	20 mg
Exts. Cappar's spinosa	13·8 mg	Terminalia chebula	15 mg
Cichorium intybus	13·8 mg	Mucuna pruriens	10 mg
Solanum nigrum	6·4 mg	Myristica fragrans	10 mg
Cassia occidentalis	3·2 mg	Piper longum	10 mg
Terminalia arjuna	6·4 mg	Mace	10 mg
Achillea millefolium	3·2 mg	Eugenia caryophyllata	5 mg
Tamarix gallica	3 2 mg	Elettaria cardamomum	5 mg
Mandur bhasma	5 mg	Carum copticum	5 mg
Saffron	5 mg	Curcuma longa	5 mg
Amber	2 mg	Exts. Berberis aristata	10 mg
Makardhwaj	10 mg	Adhatoda vasica	10 mg
Asparagus adscendens	10 mg	Eclipta alba	10 mg
Caesalpinia digyna	10 mg	Celastrus paniculatus	5 mg
Asparagus racemosus	20 mg	Argyreia speciosa	10 mg
Withania somnifera	30 mg	Abhrak bhasma	10 mg
Glycyrrhiza glabra	20 mg	Loh bhasma	5 mg
Centella asiatica	20 mg	Jasad bhasma	10 mg

Processed in Phyllanthus emblica, Terminalia chebula, Eclipta alba, Asparagus racemosus, Allium cepa. Allium sativum Phyllanthus niruri, Boerhaavia diffusa, Tinospora cordifolia, Berberis aristata, Raphanus sativus, Tribulus terrestris, Dashamoola

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*Specially contributed to the 'ANTISEPTIC'.

Material and methods.—The present study was conducted at King George's Medical College on 80 patients, mainly drawn from those attending the Psychiatric O.P.D. with some patients from the medical in-patient department. A few patients of private medical practitioners were also included in the trial. All the patients under study had minor psychiatric ailments.

For the purpose of this study, the patients were divided into 3 distinct therapeutic groups so as to observe the role of Geriforte when given alone or in combination with other commonly-used conventional therapy. The patients were distributed as follows :—

GROUP I – on Geriforte alone = 34 cases
GROUP II – on Geriforte + a mild tranquilliser = 27 cases
GROUP III – on a mild tranquilliser alone = 19 cases

Patients of all the 3 groups were subjected initially to routine investigations including haemoglobin estimation, total and differential leucocyte count and urine examination. Wherever necessary, serological tests for syphilis was also done.

The experimental drug, Geriforte was given to patients in Group I and Group II in a dosage of 1 *t.i.d.* for four weeks. The patients were interviewed at the end of each week and Geriforte was supplied for one more week. Four such sittings were allotted to each patient.

The patients in Group II and Group III were administered chlordiazepoxide 10 mg. *t.i.d.* or diazepam 5 mg. *t.i.d.* for four weeks. These patients were similarly interviewed at the end of every week and given their further weekly supply of medication, after each sitting. In a few patients, tofranil 25 mg. was used thrice daily.

All patients were evaluated at their weekly visits as per subjective and objective criteria laid down in the prescribed proforma. The proforma was designed to assess the performance level of each patient as regards various mental functions. The levels of performance were scored according to a four-point scale, initial higher score indicating impairment of a function and subsequent lower scores indicating an improvement *e.g.*, 4—3—2—1. The improvement was also corroborated with improvement reported by the patient's family.

The overall improvement in each patients at the end of the 4-week trial period was determined on the basis of the extent of recovery on various counts as graded *along-side.*

Complete recovery		100% improvement
Improvement	+++	> 75%
Improvement	++	> 50%
Improvement	+	> 25%
Poor response		< 25%
No response		

Observations.–The age of t patients ranged between years and 54 years. The d gnostic breakdown of the patients is given in Table I.

TABLE I

Showing the diagnosis

Disorder		No. of cases
1 Anxiety neurosis	...	53
2 Anxiety neurosis associated with impotence	...	6
3 Neurosis depession	...	20
4 Conversion reaction	...	1
Total No. of cases	...	80

The response to therap employed in Group I, II a III respectively is tabulated Table II.

TABLE II

Showing the response to various therapies used

Groups		No of cases	Response					
			100%	> 75%	> 50%	> 25%	< 25%	No resp
Group I	...	—	13	12	6	2	1	-
(Geriforte alone)	...	34	(38·2%)	(35·2%)	(17·6%)	(5·8%)	(2·9%)	-
Group II	...	—	4	11	10	2	—	-
(Geriforte + mild tranquilliser)	...	27	(14·8%)	(40·7%)	(37·03%)	(7·4%)	—	-
Group III	...	—	2	7	3	5	—	2
Mild tranquilliser alone)	...	19	(10·5%)	(36·8%)	(15·7%)	(26·3%)	—	(10·5

It is evident from Table II that a better recovery rate w recorded in patients who were given either Geriforte alone or combination with a mild tranquilliser. Complete recovery (100 was observed in 38·2% cases in Group I on Geriforte alone compared to 10·5% in Group III on tranquillisers alone against 14·8% in Group II on combination therapy with Gerifor and a tranquilliser.

When we take into account the response between 50% a 100% as the basis of comparison, the Geriforte treated cases Groups I and II showed a much higher response—91·1% on Ge forte alone and 92·5% on Geriforte with a tranquilliser in co trast with 63·1% in Group III (on tranquilliser alone).

TABLE III

Showing the comparison of response between control group III and trial drug groups (I and II)

Groups		No. of cases	Response (Between 50%–100
Group I (Geriforte alone)	...	34	31 cases (91·1%)
Group II (Geriforte + Mild tranquilliser)	...	27	25 cases (92·5%)
Group III (Mild tranquilliser alone)	...	19	12 cases (63·1%)

Further analysis of the rate of response showed that t quality of improvement was better in the Geriforte-treat cases (Group I) as evident from more patients with 100% response and over 75% response, *viz.* 38·2% and 35·2% respectively in contrast to 10·5% cases with 100% response and 36·8% cases with over 75% response in Group III patients on tranquilliser alone. The improvement was in the form of a better subjective feeling of well being, cheerfulness, interest in work and improved general performance. Objectively, improvement was observed in memory, attention, concentration and performance.

In the present study, there were six cases of anxiety neurosis with associated impotence as well. Of these, five patients were put on Geriforte 1 tablet *t. i. d.* and one patient was given a tranquilliser alone. The response is summarised in Table IV.

TABLE IV

Showing the response in cases of anxiety neurosis with sexual impotence

Group		No. of cases	Response		
			100%	> 75%	> 50%
Group I (Geriforte alone)	...	5	1	2	2
Group III Mild tranquilliser alone	...	1	—	—	1

The response to Geriforte therapy was very encouraging. Sexual function was completely restored in one patient during the 4-week trial period, while 2 patients reported more than 75% recovery and the other 2 had more than 50% recovery during the period. These 4 patients were asked to continue Geriforte in the same dosage for another month. They recovered almost normal sexual potency.

The first improvement in sexual function which the patients noticed was a mild itchy sensation at the tip of the glands and a perceptible improvement in the sexual drive. There was also some increase in the frequency and amount of micturition. The response was evident within 2 weeks of therapy. As the trial was scheduled only for 4 weeks, they were asked to continue Geriforte after completion of the trial, until sexual function was fully restored.

The subjective and objective pattern of symptomatic response in Group I on Geriforte is shown in Table V.

The main symptoms were in the field of memory, performance, concentration and attention. The initial scores came down to a statistically significant level after 4 weeks of Geriforte therapy, indicating a significant improvement in memory, general performance and activity, concentration and interest in work, and attention, with Geriforte administered alone.

TABLE V

Response to Geriforte in group I patients indicated in the form of scores

Symptoms		No. of patients	Response as represented by scores	
			Before treatment	After 1 month treatment
1. Memory	...	31	2 4 ± 0·3	1·2 ± 0·5 *
2. Performance	...	34	3·6 ± 0·1	0·2 ± 0 01 **
3. Concentration	...	34	3·2 ± 0.5	0·8 ± 0·02 **
4. Attention	...	34	3·5 + 0·2	1·5 + 0·1 **

P value * < 0 05 ** <0 001

Note : Higher scores indicate marked impairment while lower scores indicate return towards normalcy.

Similar observations in respect of cases who received Ger forte + mild tranquillisers for 4 weeks are summarised in Tab VI. Here also the improvement in symptoms was statisticall significant.

TABLE VI

Showing the response to Geriforte+mild tranquilliser treatment as represented by scores

Symptoms		No. of patients	Response as represented by scores		
			Before treatment	After treatment	
1 Memory	...	23	2·2 ± 0·3	1·5 ± 0·5	*
2 Performance	...	27	3·8 ± 0·2	1·1 ± 0·5	**
3 Concentration	...	27	3·6 ± 0·15	0·8 ± 0·5	**
4 Attention	...	27	3·4 ± 0·02	1·5 ± 0·01	**

P value * < 0 05 ** < 0 001

Note :—Higher scores indicate marked impairment while lower scores indicate return towards normalcy.

Conclusion.—The present Geriforte trial was conducted on 80 patients ov a span of 11 months at K. G. Medical College, Lucknow, in the Department o Medicine and Psychiatry. The patients were suffering from anxiety neuros alone or with sexual impotence and neurotic depression. In the trial dr group 61 patients were taken up and for a comparative study 19 patients o similar diagnosis and symptoms were taken as controls. The trial drug gro consisted of Group I patients (34 patients) who were given Geriforte alone in th dosage of 1 *t.i.d.* for 4 weeks while group II patients (27 patients) were treat with Geriforte 1 *t.i.d.* + mild tranquillisers for 4 weeks. Controls taken a group III patients (19 patients), were given mild tranquillisers alone. Ever effort was made to use the same tranquilliser in Group II and Group III. Th subjective and objective response in each of the three groups was assessed a every weekend on a score basis, and at the end of 4 weeks, the total response w assessed.

It was found that most of the patients who were treated with Gerifor alone or with Geriforte + a mild tranquilliser showed better response (betwe 50% to 100%) *viz* 91·1% in Geriforte treated Group and 92 5% in Geriforte mild tranquilliser Group in contrast to 63·1% in mild tranquilliser group (Group III). The recovery was also faster in the patients who were given Geriforte.

The quality of the response was much better in Geriforte treated group (Group I) *viz* 38·2% patients had 100% recovery and 35·2% had more than 75% recovery (*i.e.* 73·4% had 75% or more recovery in Geriforte alone treated group) as compared to 10·5% and 36·8% of mild tranquilliser alone treated group (Group III).

The response demonstrated statistically significant improvement in general performance, interest in work, concentration, attention and general well-being as shown in Tables 5 and 6.

Another interesting observation found, was in patients with anxiety neurosis who also had associated sexual impotence. Six such patients were included in the study. Of these, five were given Geriforte, alone 1 *t. i. d.* for 4 weeks and 1 patient was put on a mild tranquilliser alone for 4 weeks. The response to Geriforte treatment was very encouraging. One patient had complete restoration of sexual function, three patients had more than 75% restoration of sexual function, and the other two had more than 50% recovery within the 4-week trial. Since the trial period was of 4 weeks only those patients who had 75% and 50% recovery were asked to continue Geriforte in the same dose till sexual function was recovered. This seems to be an encouraging and interesting side-light of the trial which needs to be further evaluated.

VIRUS MENINGITIS

Patients with mild meningeal signs and a predominantly lymphocystic pleocytosis in the cerebrospinal fluid are most likely to have some form of viral infection but it is crucial to remember that the terms viral meningitis and asceptic maningitis are not synonymous. Even in apparently typical cases the clinical diagnosis should initially always be asceptic meningitis modified by laboratory findings At the bedside the three most important conditions that demand differentiation are space-occupying lesions, tuberculous menigitis and viral meningitis. A tumour or abcess in the C.N.S. which does not produce focal neurological signs is a cause of real difficulty. Modern scanning techniques have helped in the early differentiation of these lesions. In typical cases the characteristic findings in the C.S.F. will help to differentiate viral and tuberculous meningitis, but in many cases the overlap is so great that the results of a single examination cannot be relied on to solve the clinician's dilemma. The bromide partition test or measuring the immunoglobulin concentration in C.S F. may occasionally help, but repeated C.S. F. examinations at, say, 24 hour intervals which indicate a falling glucose concentration with a stable blood glucose and an increase in cell-count, often in the absence of acid-fast bacilli, may well be the only indication that the true nature of the infection is tuberculous. Mumps is probably the commonest diagnosis confirmed in any large collection of cases of viral meningitis. Entroviral meningitis tends to occur in outbreaks A point worth emphasing is that the typical clinical presentation of enteroviral meningitis cannot be distinguished from non-paralytic poliomyelitis.—(*B. M. Journal*, 25th November, 1978).

ANAPHYLAXIS AFTER ORAL PENICILLIN

Allergic reactions to penicillin are not uncommon but anaphylaxis is rare. Anaphylaxis after oral ingestion is rarer still. Two patients suffered near-fatal anaphylaxis after taking oral penicillin. They had been treated with penicillin preparations previously with no symptoms suggestive of allergy. The incidence of anaphylactic shock in patients treated with penicillin is between 0·015 and 0·04%. The main antigenic stimulus in penicillin allergy is now thought to come from the breakdown products of the penicillin molecule; the penicilloyl group with the "minor antigenic determinents" such as Na-benzyl penilloate and Na-benzylpenicilloate. Since all semi synthetic forms of penicillin are built-around the same molecular nucleus, this accounts for cross allergy to different preparations, and activation of energy in already sensitised individuals often requires only minimal amounts of penicillin particularly with regard to anaphylaxis. Oral penicillin preparations can cause as rapid and as severe an allergic reaction as parenteral preparations.—(*B. M. Journal*, 18th Nov. 1978).

DOES PHYSICAL FITNESS IMPROVE HIGHER MENTAL FUNCTIONS ?

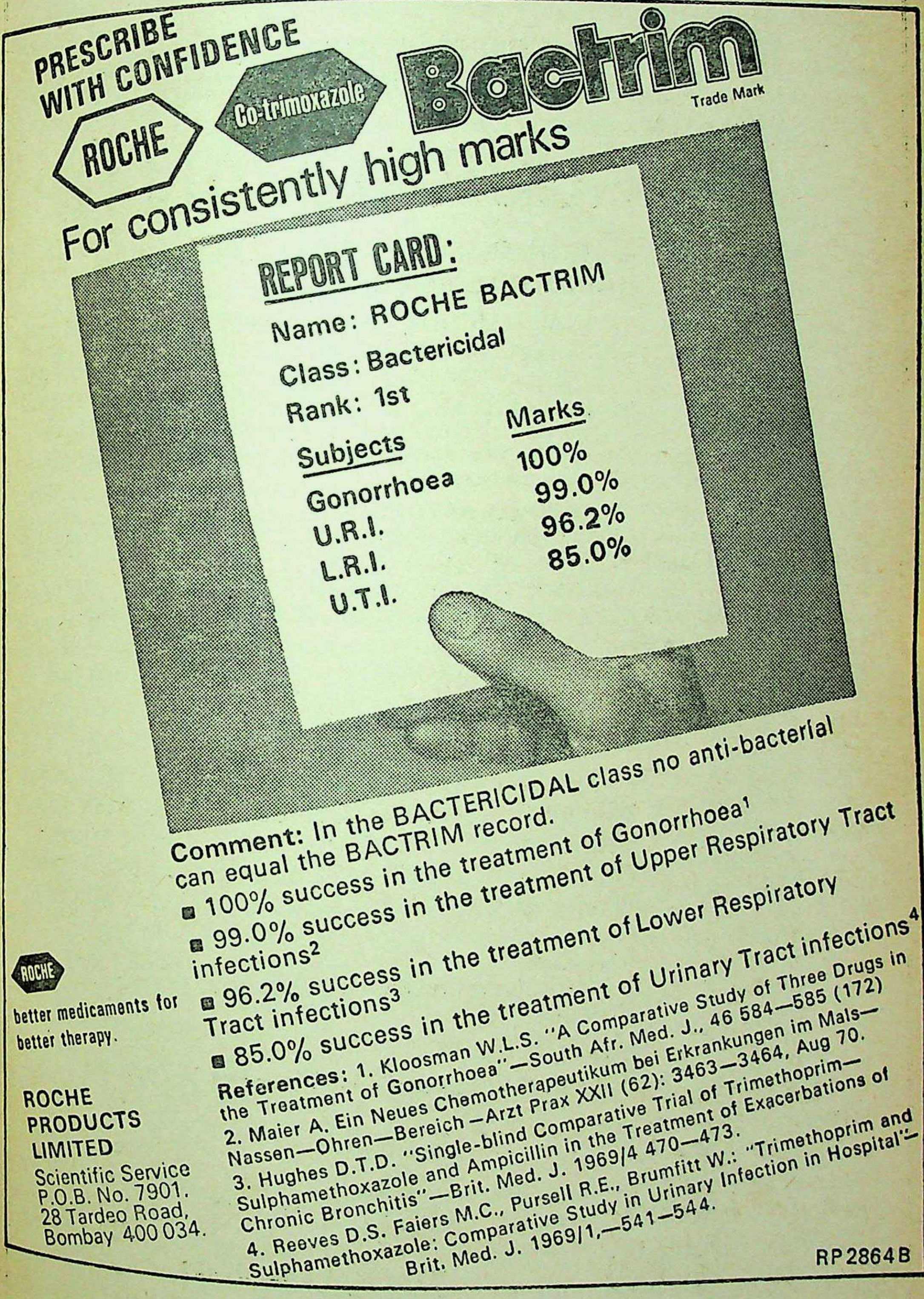
Question.—Recently there has been rather pejorative comment about the value of physical fitness, in particular jogging. Is there any objective evidence that an improvement in physical fitness improves higher mental function ?

Answer.—There appears to be some long-term psychological benefits as a result of regular exercise. In controlled studies various authors have observed increases in extroversion, self-confidence, self-awareness and improvements in recall in the elderly. It has been claimed that the quality of learning, mental concentration, and intellectual performance achieved by students and other improves with physical fitness, but this is not supported by well-controlled observations. On the other hand, there is strong evidence for physiological improvement when people with a sedentary lifestyle take up regular exercise; they report that they feel better within only a week or two. They report this sense of improved wellbeing because they notice an improvement in their physical work capacity and a reduced sense of effort for any given task. They can work harder, longer, and with less fatigue than when they were inactive; and the range of physical activities in which they can comfortably participate has been extended. The rapidity with which physiological improvements in muscular and cardiovascular function occur with regular exercise, and their magnitude, are sufficient to explain their reported improvement in the quality of life. Mood and morale will improve secondary to these general physiological changes. —(*B. M. Journal*, 25th Nov. 1978).

CESSATION OF BREAST-FEEDING

Question.—Should a patient who wishes to cease breast-feeding restrict her fluid intake or should she drink a lot ?

Answer.—Neither. Within reasonable limits the fluid intake has no influence on the quantity of secretion. The cells of the glandular tissue of the breast, need an adequate amount of water to fulfil their functions, but how much of it they will take up depends on their metabolic processes and not on some theoretical notion that the body is like a tank to be filled to generate a higher hydrostatic pressure. It is time that such notions were expunged from midwifery and obstetric text books and practice.—(*British Medical Journal*, 11th Nov. '78).



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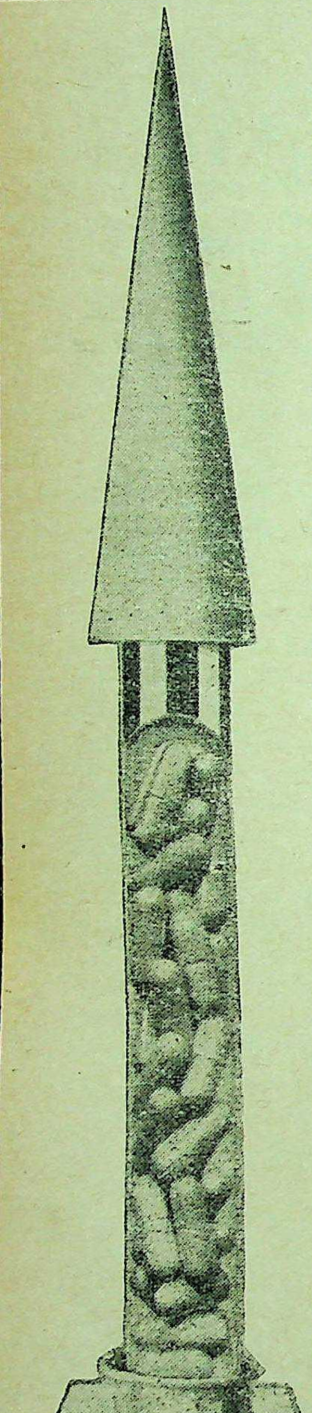

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SCAD

MINI LAPAROTOMY FOR FEMALE STERILIZATION*

(A Simplified Technique)

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Introduction.—Permanent female sterilization has become an accepted mode of family planning all over the world, and many surgeons have developed techniques to suit their surroundings and acceptance by patients.

Female sterilization by the mini-laparotomy technique is an universally accepted method. At the Mary Wanless Hospital, we have developed a modification of the classical mini-laparotomy technique to suit our needs. The purpose of this paper is to present our experience using this technique in operating on over 5042 females. We have also worked out the incidence of tube-ovarian deviation from normal, position of the uterus etc., in the 2168 cases done during a family planning camp in 1976.

Material and methods :—A total of 5042 females were operated for fallopian tubal ligations from January 1975 to 31st. December 1977. During this 3 year period we had operated upon these patients both during regular surgical sessions and in camps. 2169 patients operated upon between 1st Jan. '76 to 31st Dec. '76 in camps only form the basis of detailed work up regarding the various points considered (*vide infra*) below.

Admission to the ward:—A pre-operative assessment was carried out in all patients. The majority were admitted on the night before the surgery. Only a small number was admitted earlier or on the day of operation. All had a thorough history-taking with special reference to menstruation and child bearing. A general physical check up was carried out in all cases. Permission for operation was then obtained and a skin test for penicillin, tetanus antitoxin and xylocain sensitivity was carried out. Tetanus toxoid and long acting penicillin, were given on the night before the operation. Luminal or other sedative was given for restful sleep and to allay apprehension.

Premedications.—10 mg. siquil or 20 mg. of valium, atropine 0·5 mg. and analgin 500 mg. were given ½ hour before the operation to all patients. Additional further intravenous siquil or valium was given if the patient was found to be unduly apprehensive.

Procedure.—The patient was put in a Trendelenberg position. A 1·5–2cm. skin incision was made, 3 fingers above the symphysis pubis, the peritoneum was reached and opened, the tubes in turn were identified with the left index finger and caught between finger and the pelvis or anterior abdominal wall and brought outside the incision by a Babcock clamp. The tube was ligated after Madliner's method using cotton sutures and the wound closed in layers; the skin edges were approximated b subcutaneous sutures.

---

*Specially contributed to the 'ANTISEPTIC'

Note :– The senior surgeon alone infiltrated the skin with xyloca opened the abdomen and brought the tubes outside the incision for ligati and rest of the procedure was carried out by the assistants.

Post operative care :—The patients were allowed to go hon within 4–24 hours after the operation except where there we complications. Prophylactic long acting penicillin or terramyc caps for the next 4 days and salicylates were given to all t patients at the time of discharge, to relieve pain.

Discussion admissio —Admission to the war was found very essenti for the physical chec up and to explai the procedure to t patients. During t period of hospitalisati the fear of the oper tion is overcome an the ward nurse is ab to take note of patien who are nervous an make a special effort allay their fears.

Skin sensitivity te for penicillin is routine. As a result this we have detecte 23 out of 4,603 patien who had local reacti to the test done, thou none of them w severe. We feel th penicillin resistance patients is not a b problem in our rur areas. In addition pe cillin is a very effecti and inexpensive an biotic as compared other antibiotics.- Sk tests for tetanus toxoid and xylocain are done to avoid any und reaction which may take place; skin test for ATS is done j in case one has to give the serum later on for curative purpo (Though such a necessity never arose in our experience).

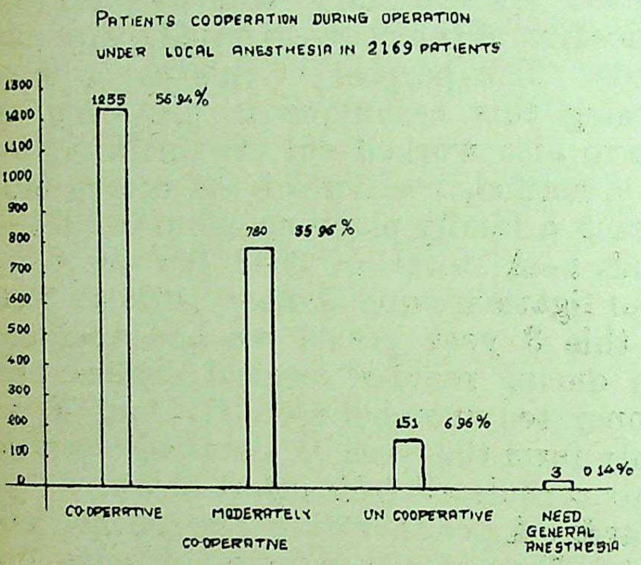

CHART I

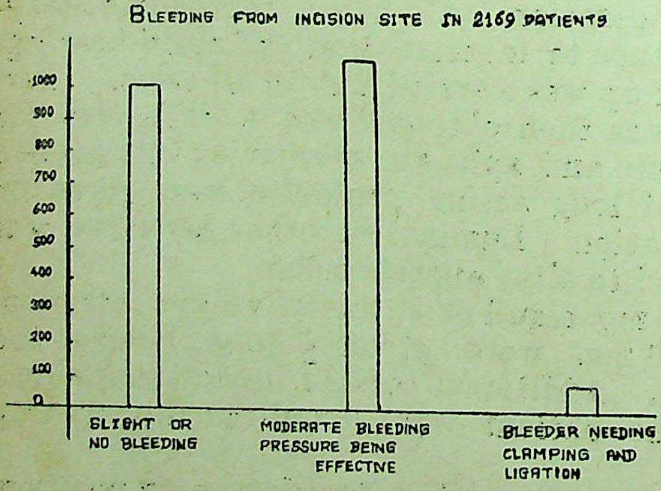

CHART II

Instruments.—The instruments used during the operation a of the simplest type and they are available in any dispensa

Sophisticated instruments are not necessary. Hence this method is useful in smaller dispensaries and camps.

Premedication.—It is a common practice to give a heavy dose of pethidine or morphine and siquil before the operation. We found that this made the patients at times dangerously drowsy. We have since used 15 mg. I. V. and 2 cc. injection ultragin I.M. and found that it gave just adequate sedation, and we have not noted any problem of excessive narcosis in any of our patients. We have at times given 20 mg. siquil in big-made females and only 10 mg. siquil in patients with a small build. The attendant dangers of pethidine and morphine are thus avoided.

Co-operation of the patient.—Contrary to our expectation, women from rural areas have been very co operative and taken the procedure well. It must be stressed that the few minutes spent in explaining the procedure to these patients makes a great difference. Three women required general anæsthesia for the completion of the procedure and all these women had pelvic adhesions; in one case damage to the mesentery had caused a hematoma and which needed a better look inside the abdomen to eliminate any other complication. Only 7 per cent of patients were really non co-operative but the procedure is so short that it can be completed with ease in spite of the patient's lack of co-operation. Bleeding from the incision is a trival matter.

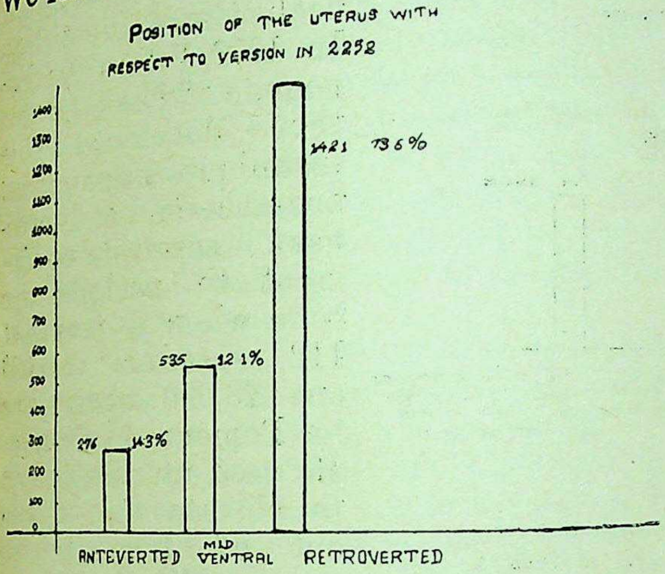

CHART III

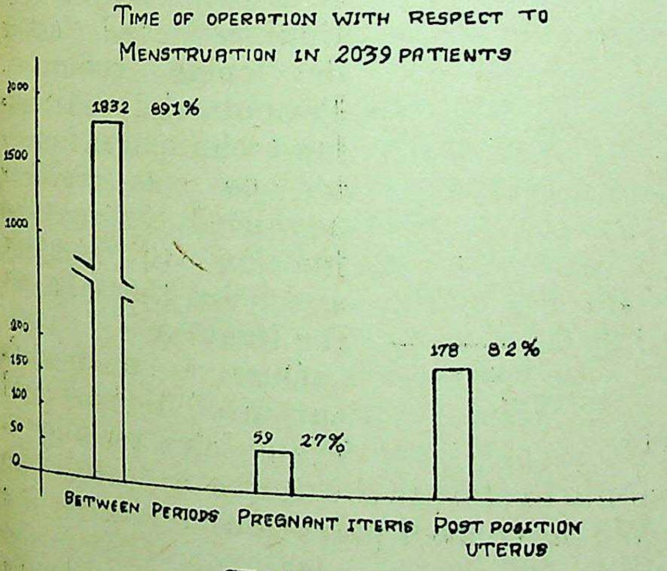

CHART IV

Technique.—Stevenson, an American surgeon in the early sixties used mini laparotomy as an aid for diagnosing pelvic disease in females. (Using Mini Planen-Stjel incisio In 1972 Saunders and Munisick of University of New Mexi School of Medicine used mini-lap technique for the first time f female sterilization. using general anæsthesia. Frank Stubbs o Texas (USA) developed the technique further using local anas thesia, and cautery fo occlusion of the tube In 1973 Vitton Osath nonodh of Thailand fu ther developed th technique using loc anaesthesia, and ord nary surgical equip ment to occlude th tube when a team o 112 surgeons carri out 28,000 operatio by Pomeroy techniq He used uterine soun to elevate the uter out of true pelvi cavity. His techniq is popular now in Ph lippines and othe developing countrie Pramote also used mi lap technique and pro toscope was furthe advanced through th incision to identif and bring the tube o for ligation.

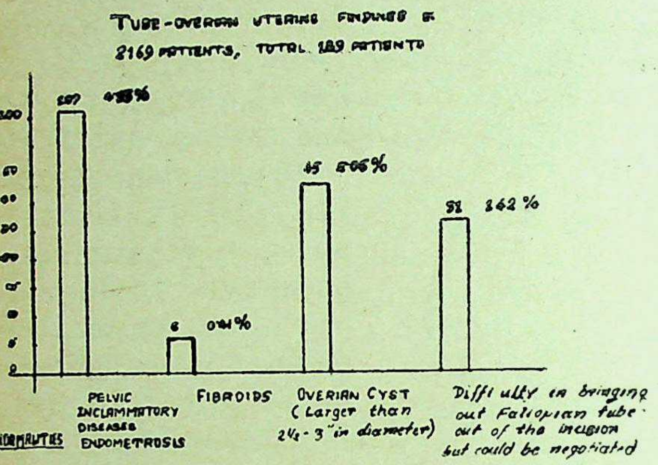

CHART V

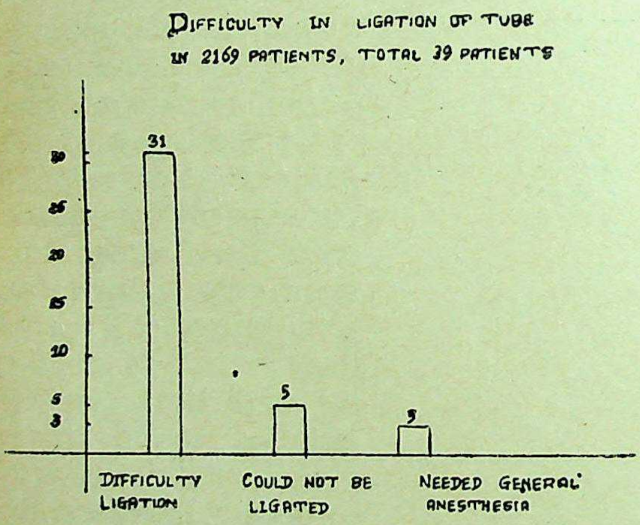

CHART VI

Ours is a modi cation of Vitton's an Pramote's technique as we used neither instruments to elevate the uterus or proctoscop to identify the tubes. We have used palpation to identify th tubes.

Fifty-six (55/5042) of the patients operated were seen by again for moderate to severe skin infection. 16 females came t us for pregnancy following tubal ligations, 10 more were seen b their family physicians during a door to door follow up of the patients.

The main procedure of blind identification and usual conf mation of the fallopian tube was done by the senior surgeon an thus there were no mistakes about the anatomical identificati and ligation of the tubes. This may be a factor in our low steri zation failure rates. (26/5042) :—Moderate to severe infecti needing hospitalization occurred in 56 cases only which is 1·1%. (56/5042) and much lower as compared to standard hospital infection rates.

Fundus of the uterus needs to be elevated for visual identification of fallopian tubes. Vitton accomplished this with his specially designed uterine elevator, others have used uterine sounds, uterine biopsy curette, Semn's uterine cannula, cannula for utero tubal insufflation, Hulka's uterine controlling tenaculum, Jacob's tenaculum, Rubins canula or packing the vagina alone. Proctoscope was used by Pramote after anteverting the uterus by finger and protoscope for better visualization. We in Mary Wanless Hospital have used index finger of the left hand to antevert the uterus and to identify the tubes which are brought out in turn by Babcock tissue forceps after blind identification. This saves a lot of time.

Difficulty in bringing the tubes outside the incision was experienced in 31 cases. This was merely due to pelvic inflammatory disease binding the adenexa down to the pelvic floor, in fat women with narrow pelves, women with short tubes or ovaries due to endometriosis. In three cases it was not possible to do the tubal ligation due te endometriosis. In three other cases it was not possible to do the tubal ligation due to the adenexa being plastered to the pelvic floor. The operations in these cases were suspended due to the fear of causing a tear and bleeding from the adhesions.

Uterine position and state.—Conforming to the general experience of other obstetricians and gynaecologists, we found that retroversion is the commonest position; very few uteruses are in mid-position, about 3 per cent of child bearing females were pregnant and 8·2 per cent post-partum.

Abnormalities and associated diseases were noted in 7 per cent of females in the reproductive age group, pelvic inflammatory disease being the most common. Ovarian cysts of the size of 2″—3″ in diameter were resected and found in 2·1 per cent of females in reproductive age groups. Smaller cysts are punctured and are a fairly common finding.

Injuries to other viscera.—Injury to the bladder musculature is a possibility when one is operating on a post-partum uterus or pregnant uterus with an incision just above the symphysis pubis. We take special care to push the bladder down with finger and hence have had no problems with the bladder. Similarly injury to the mesentery and bowel occurred while opening the peritoneum, injury to the ovary was due to heavy clamping and traction on the ovary while identifying the fallopian tube blindly. Gentle handling of the tissues avoids this complication. Hematoma in the broad ligament occurred by careless passing of the suture through the mesoalphinx and at times due to heavy traction and is totally an avoidable entity.

Economical consideration.—We have tried to minimise th expenses for the patients by adopting following procedure.

1. *Anaesthesia* .—We use local anaesthesia in all our patient The concentration of xylocain is 5% compared to 2% xylocai used by others. The total amount of 5% xylocain used in ever patient is just 5 cc. Addition of adrenalin will help in limiti bleeding and to minimise reactions to xylocain.

2. *Suture material* :—We use cotton sutures for tying t loop of fallopian tube, closure of abdomen is also achieved b cotton for all layers in all the patients.

Follow-up.—Patients operated at the Mary Wanless Ho pital were brought for family planning through the efforts o the Zilla Parishad. We felt the need for follow up of the patients in post-operative period for various reasons.

A team of doctors, nurses and paramedical workers visite the group of villages enroute so that the total patient populati was visited by our team through 15—20 visits every year.

Patients thus were visited soon after the operation duri active Zilla Parishad camps; this alleviates the fears and give confidence to the patients.

Conclusions.—In the technique followed at Mary Wanless Hospital th incision is smaller that the 'Mini Lap' incision generally used, tubes are iden fied blindly and brought out of the incision for visual confirmation and ligati without any special instrument. The time required in carrying out the procedu is short and the procedure could be done with least trained staff includi nurses. In our institution we average 20—25 operations an hour with a team one senior surgeon, 6 interns or nurses, and other operation room staff. W have thus done 210 operations in one day in 8 hours of actual work.

We carry out follow-up visits to the patients' village during house ca and find that early discharges from hospital had no deleterious effect. We ha often found that women had gone out to the fields to work after 3—4 days aft the operation. We have had no mortality or morbidity in carrying out this proc dure and we feel it is ideally suited for the family planning campaign in ru areas.

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TRAVEL AND ISCHAEMIC HEART DISEASE

The hypothesis that travel precipitates acute ischæmic heart disease was tested in a case-control study of holidaymakers admitted to hospital in Great Yarmouth. The distance that patients with ischæmic heart disease had travelled to reach Great Yarmouth was on an average greater than that travelled by patients with other diseases. It is concluded that the greater distances by patients with ischæmic heart disease may have helped to precipitate the attack.—(*B. M. Journal*, 18th Nov. '78).

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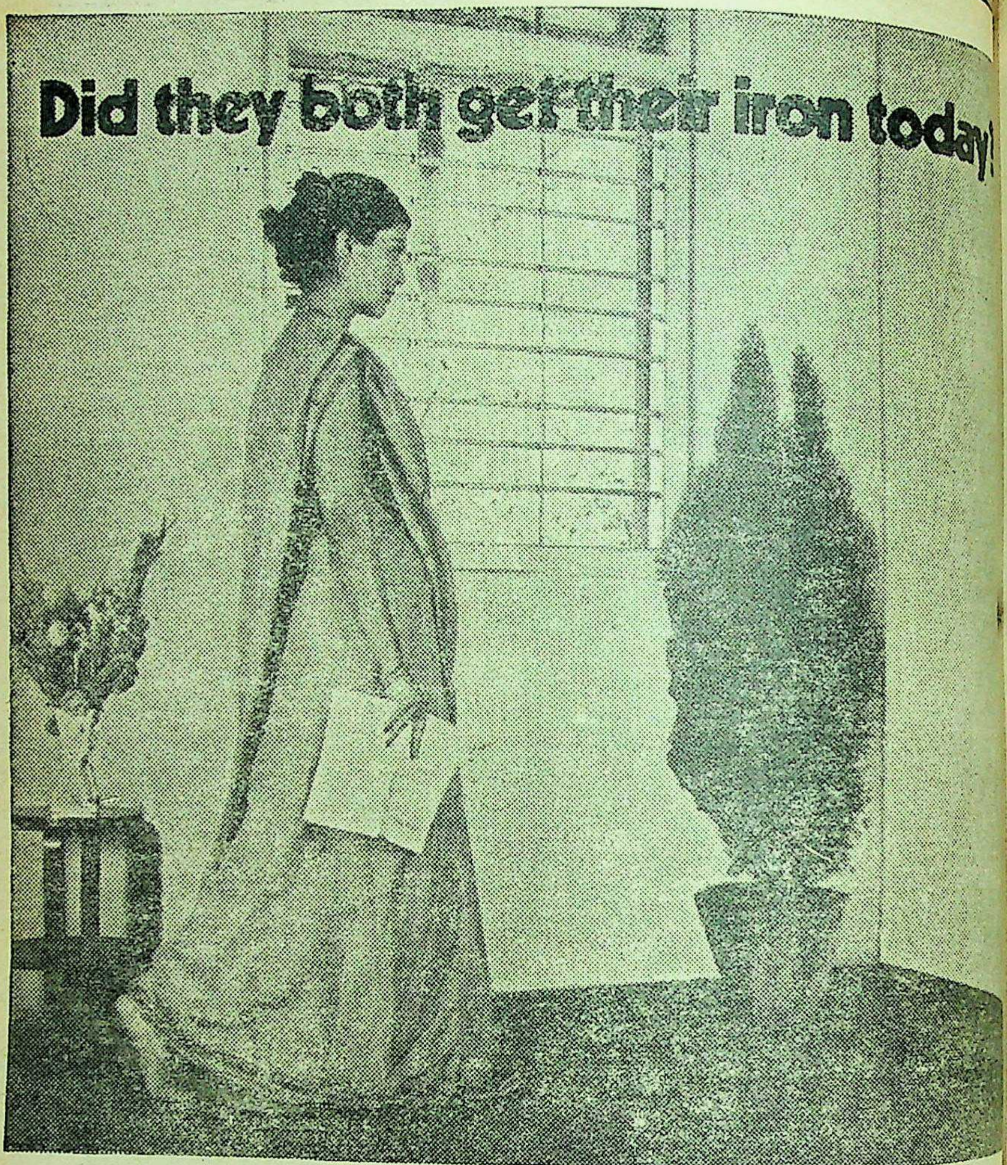
Did they both get their iron today?

Obviously the risks increase if they didn't. Anemia in pregnancy is not uncommon and 90% of it is due to dietary insufficiency 1

(1) Kitay, D.Z. *Conf. Ob/Gyn* 2:17,1972.

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INFECTIOUS MONONUCLEOSIS—AN APPRAISAL*

N. ISLAM, S.I., M.B., Cal., T.D.D., Wales., F.C.P.S. (Pk.), F.C.C.P., (U.S.A.), F.R.C.P., (Ed.) F.R.C.P., (London) *Director and Professor of Medicine Institute of Post graduate Medicine and Research Dacca-2, Bangladesh*

THE earliest description of infectious mononucleosis (IM) was advanced in 1885 and again in 1889. In 1889 Emil Pfeiffer described an epidemic in children under the title "Glandular fever". The title "Infectious mononucleosis" was given in 1920 when haematological changes were recognised. In 1932 Paul and Bunnell discovered a heterophile antibody in patients suffering from this disease (Evans, 1974). In 1964 Epstein, Achong and Barr demonstrated a herpes-like virus in Burkitt's tumour through electronmicroscopy. This is known as "Ebstein-Barr virus". (EBV). In 1968 Henles and his associates reported that EBV antibodies developed in patients, suffering from infectious mononucleosis. During the same year Niederman and his associates emphasized the link between EBV and infectious mononucleosis (Niederman, *et al* 1968).

Etiological considerations.—Whatever might have been the confusion in the etiological consideration of infectious mononucleosis, evidence so far available clearly indicates a casual relationship of EBV with infectious mononucleosis (Miller, 1975).

The disease occurs only in persons who do not have antibody to this virus. Students entering college having antibodies to EBV do not develop the disease. EBV antibodies can be regularly demonstrated in infectious mononucleosis. Persons with EBV anti-bodies give history typical of infectious mononucleosis. After heterophile antibody positive infectious mononucleosis there is development of transient EBV specific IgM antibody.

Transfusion of blood containing EBV positive lymphocytes may lead to development of infectious mononucleosis.

Experimentally an animal infected with EBV containing material, shows EBV specific serological responses.

It is, therefore, almost certain that EBV is the etiologic agent for infectious mononucleosis.

Veltry and his associates (Veltri, McClung and Sprinkle, 1976) suggested that tonsillar lymphocytes may be a reservoir of EBV by demonstrating that lymphocytes from palatine tonsils of seropositive individuals contain EBV antigen.

Infectious mononucleosis has a world wide distribution but the extent of the disease and the clinical manifestations may vary from country to country and in different geographic areas (Niederman, 1977). Prevalence of the infection varies in different socio-economic groups. Among children below 4 years of age in the lower socio-economic group in the U.S.A., the antibody is found in 50% to 85% whereas in the upper income group this found in only 14% of children at the age of 5 years (Henle a Henle, 1970 ; Sumaya *et al,* 1975 ; Sumaya, 1977). This explai the higher prevalence of clinical cases in the teaching institu tions in young adults who belong to privileged group having lower incidence in childhood. In the developing countries agai clinical cases are rare and more than 90% of children becom seropositive by six years of age (Miller, 1975).

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*Specially contributed to the 'ANTISEPTIC'.

Pathogenesis.—The disease has a low order of contagiousnes Perhaps the excretion of the virus through saliva is intermitten Kissing is considered to be an important mode of transmissio It is unusual to get secondary cases of infectious mononucleosi among household contacts or roommates of infected person (Henle and Henle, 1970). The virus may be found in the ora secretion from one week to 16 months after the onset of clinica disease (Niederman *et al,* 1976).

After infection the virus possibly grows in the oropharyn geal lymphoid tissue and salivary glands. Involvement of th liver, spleen, bone marrow and other lympho-reticular syste including peripheral lymphoid structure are evidence of bloo stream dissemination. Changes are almost exclusively confine to the lymphoid tissue. Hyperplasia of the naso-pharynge lymphoid tissue is constant. A typical lymphocyte may b identified in many of these tissues. In some instances the lesio may resemble malignant lymphoma. Involvement of the splee may make it friable and liable to rupture. Other organs lik liver, heart, kidney and central nervous system may be infil trated with mononuclear cells including a typical lymphocyt leading to occasional functional disturbances. There may b hyperplasia of bone wit occasional small gran loma formation.

During the first wee of illness, IgM antibod is detectable in 82% o cases and by the thir week this is found i 100% cases. These an bodies disappear by th end of the third mont of illness. The presen of the IgM antibo indicates acute inf tion but it is less specific than long lasting IgG response (Eva *et al,* 1975).

FIG. 1. SHOWING SEROLOGIC RESPONSE IN INFECTIONS MONONUCLEOSIS.

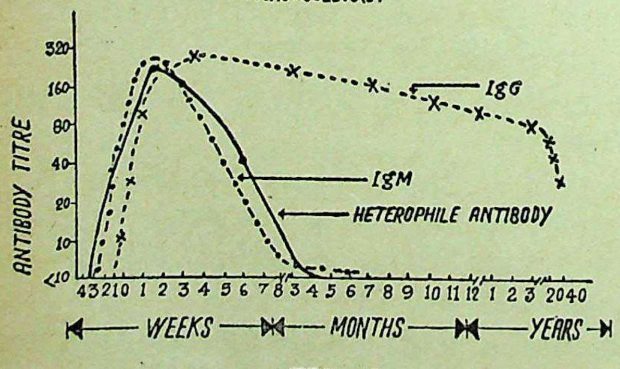

FIG I.

IgG antibody for EBV may be present in 87% cases of inf tious mononucleosis and in 100% cases during the third we

Presence of this antibody possibly confers life long protection against infection.

For the diagnosis of infectious mononucleosis in the adult with a negative Paul-Bunnell test, detection of JgG antibody to EBV is, therefore, most useful.

Clinical features.—The disease is common in children and young adults. The incubation period is usually around 30 to 50 days, but in children it is around 10 to 14 days. Early symptoms are non-specific and consist of mild to moderate pyrexia, malaise, sore throat and headache. Sore throat is one of the most common features of infectious mononucleosis which occurs during the first week of illness. In approximately 50% of the cases, a greyish white membrane over the tonsils resembling diphtheria may be present. Cervical lymphadenopathy is virtually present in all cases. The lymph glands are symmetrical and both the anterior and posterior group are characteristically involved. The latter is of great diagnostic importance (Fernbach and Sterling, 1972). The enlargement may be minimal. A "Bull-neck" appearance as in some cases of diphtheria is extremely rare. Axillary and inguinal lymph nodes may be involved in some cases. Mediastinal lymph-node involvement is very rare. Characteristically the lymph-nodes are discrete, elastic and if at all only slightly tender. They do not suppurate and there is no evidence of inflammation of the overlying skin.

The spleen is slightly or moderately enlarged in 75% of the cases whereas the liver is enlarged less frequently (10—15%). Jaundice is rare, There may be erythematous maculo-papular eruption on the trunk and proximal parts of the limb in 10% cases (Table I).

Neurologic manifestations consist of headache, which is common and which may be severe. Isolated cranial and peripheral nerve involvement, nystagmus and papilloedema may occur. Cardiac, pulmonary and renal symptoms are rare. In children, fever, lymphocytosis, splenomegaly or hepatomegaly, lymphadenopathy and tonsillitis should raise the suspicion of infectious mononucleosis. There may be associated respiratory symptoms (Tamir, *et al.* 1974).

TABLE I

Showing the clinical features

Clinical features	Percent
Malaise, fatigue	90 – 100
Fever	90—100
Sore throat	90 – 100
Cervical lymphadenopathy	90—100
Splenomegaly	50—75
Tonsillitis	30 – 50
Hepatomegaly	10 – 25
Jaundice	5—10
Rash	5 – 10

In those over 40 yrs. the disease has a longer febrile period of 20 to 30 days and the patient is usually severely ill. Liver involvement as determined by liver-function tests is most severe.

Cervical lymphadenopathy and a typical lymphocytosis are le common than in younger persons. The disease should be suspecte in this age group when this is a combination of fever, sore thro and abnormal liver function tests.

A wide range of neurological manifestations like asepti meningitis, encephalitis, blurring of vision, cerebellar syndrom and Guillain-Barre syndrome may appear any time during th course of illness.

Administration of ampicillin in patients with infectiou mononucleosis leads to development of skin rashes in 70 to 95 cases (McKenzie, Parratt and White 1976). It is, therefore extremely important to consider the possibility of infectiou mononucleosis in all cases of ampicillin rash unless prove otherwise.

Diagnosis.—Infectious mononucleosis is a benign lymphoreticular disorder characterised by mild to moderate pyrexi pharyngitis, cervical lymphadenitis, lymphocytosis with more than 10% atypical lymphocytes, an absolute increase of lymphocytes and monocytes by more than 50% and positive test for heterophile and EBV specific antibodies. Splenomegaly may be found in 50–75% cases.

Infectious mononucleosis shows an absolute increase in the number of lymphocytes and monocytes which when exceeding 4500 per cumm. should be taken as of great significance. More than 50% of the total leucocytes should be constituted by monocytes and lymphocytes. Atypical lymphocytes which are variable in size, usually large and have a vacuolated basophilic cytoplasm may constitute 10% or more of the cells. The neuclei of these cells vary in size, location and configuration. They may be horse shoeshaped and indented. A typical lymphocyte may also be present in other viral diseases for example, acute viral hepatitis, mumps, german measles and measles but they constitute less than 10% of total leucocytes.

The total leucocyte count may be normal or low during the first week of illness while during the second or the third week it may be as high as 20,000 per cumm. In about 50% cases there may be thrombocytopenia. Serum bilirubin is usually normal though there may be slight increase in alkaline phosphatase, SGPT and SGOT (Bilirubin—Enzyme—dissociation).

Paul—Bunnell test becomes positive in titre of 1 in 200 or above in more than 80% cases after the first week of illness and may remain positive for many weeks.

Mono-Spot test is a simple and rapid slide test now commonly used. This is quicker and more sensitive than Paul—Bunnell test. This can be done in two minutes.

In children the disease should be differentiated from streptococcal sore throat, Vincents angina and diphtheria by throat culture, hæmatologic and serologic test besides other clinical features characteristic of infectious mononucleosis.

Acute infectious lymphocytosis in children is a benign disorder and not accompanied by splenomegaly or lymph node enlargement. The "typical lymphocytes" are absent and serologic tests are negative.

The condition has to be differentiated from leukæmia in which anaemia is an usual feature. Marrow-biopsy is characteristic, Paul-Bunnel test and monospot test are negative. Symptoms are usually persistent and progressive.

In lymphadenoma the peripheral blood does not show lymphocytosis and the lymph node enlargement is charecteristically progressive.

In cytomegalovirus mononucleosis, splenomegaly, hepatomegaly and atypical lymphocytosis are common. But sore throat and cervical lymphadenopathy are absent. If the condition is associated with transfusion, the virus may be excreted in the urine and C.F.T. may be positive.

Cases with jaundice may be confused with viral hepatitis. Biochemical changes in viral hepatitis do not show bilirubin enzyme dissociation. A typical lymphocytosis is usually transient and occurs during the pre-icteric phase of viral hepatitis.

During the prodromal stage of rubella, infectious mononucleosis may be indistinguishable during the early stage of the former because of the presence of fever, malaise, cervical lymphadenopathy and lymphocytosis. The rash of infectious mononucleosis is mainly on the trunk and rare on the face whereas that of rubella in more obvious and invariably present on the face. The rubella virus may be isolated from the throat and a rising rubella antibody confirms the diagnosis.

Treatment.—This is mainly symptomatic with bed rest during the febrile period. Salicylates may be advised for headache and painful sore throat. Antibiotics have no role in an uncomplicated case. Most of the patients including those with neurological complications recover uneventfully in the course of a few weeks. Splenic rupture which is very rare has to be tackled by splenectomy and blood transfusion.

Corticosteroid therapy should be avoided except under the following contitions: Extensive pharyngeal oedema (This may also require, tracheostomy) haemolytic anaemia, thrombocytopenic purpura, myocarditis and pericarditis, moderate to severe neurologic complications.

Acknowledgements.—Thanks are due to Dr Naseem Akhter Chowdh M.B.,B.S., (Pj)., F.C.P S., (Bd)., of the Department of Medicine, IPGMR for encouragement and careful scrutiny of the references.

Messers Fazlur Rahman and Sujat deserves our thanks for t secretarial assistance.

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AN EVALUATION OF LEVAMISOLE FOR TREATMENT OF ASCARIASIS :

Levamisole was tested in Iran, in Brazil and in Mississippi and Louisiana for its efficacy as a single-dose oral treatment for Ascari infections. Children aged 2 to 15 years were treated with levamisole and comparative anthelmintics as follows : 453 with levamisole, 461 with piper azine citrate, 17 with pyrantel pamoate, and 19 with a placebo. Cur rates and total reduction in mean egg counts observed were 92% and 98% respectively for levamisole and 66% and 90% for piperazine. Sixteen of 1 treated with pyrantel pamoate were cured. None of the drugs cause notable side reactions, but in all four studies side effects were more frequen with piperazine than levamisole. Levamisole was found to be a well tolera ted, highly effective single-dose ascaricide.—(*J.A.M.A.*, 1-9-1978).

Cases and Comments:

REGIONAL ENTERITIS

(A Case Report)

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AND
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Govt. Stanley Medical College and Hospital, Madras-1.]

INTRODUCTION :—Regional Enteritis (*Crohn's disease*) is a rare entity for all practical purposes; no causative organism has been found in the lesion or in the stools. There is evidence that heredity may be factor.

Case report.—Mr. G., a 40 years old man was admitted in our unit with the complaints of progressive distension of abdomen of 5 years' duration, with increasing constipation of 3 days duration. There was no history of an acute episode at any time, except at the time of admission in our wards.

There was a past history of an acute episode with diarrhœa for which he had been treated symptomatically.

The patient was moderately built, with no evidence of dehydration. The abdomen was grossly distended. The coils of intestine were standing out in a prominent manner and were arranged in stepladder pattern. There was marked visible intestinal peristalsis. No mass was palpable, with tympanic percussion note all over the abdomen. Perrectal examination showed no evidence of perianal fistulæ.

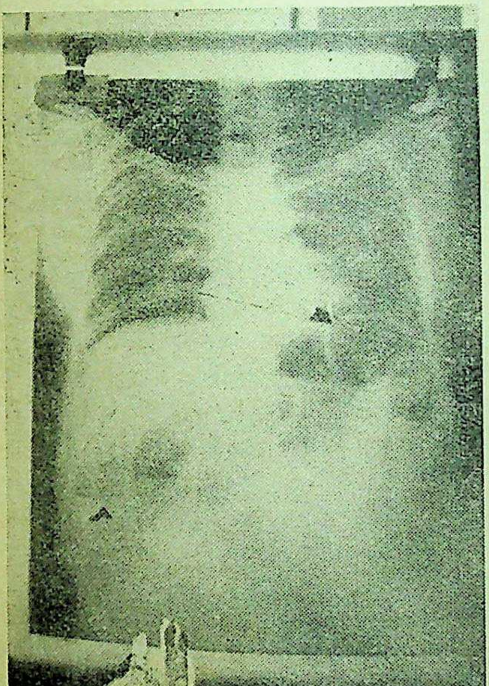

FIG. I. Mid-gut obstruction showing multiple fluid levels and gas shadow

With the above clinical presentation, a clinical conclusion of acute midgut obstruction superadded on pre-existing chronic obstruction, probably following tuberculous stricture was thought of. Plain X-ray abdomen in the erect posture, confirmed a low midgut obstruction with classical findings. X-ray chest showed no evidence of tuberculosis. With the radiological diagnosis of acute midgut obstruction, essential emergency investigations like electrolytes and blood urea estimation were done and found to be within normal limits.

Operative management.—An emergency laparatomy w done through a right mid paramedian exposure. The followi findings were noted. (1) The cæcum was found normal with evidence of hindgut obstruction. (2) Very grossly distended co of jejunum and ileum were seen. (3) About 3″ of the termi part of the ileum from ilio-cæcal junction was found very mu narrowed with the lumen almost closed. (4) Proximal to th lesion about one foot length of the ileum showed marked thicke ing of all layers after deflation. (5) The mucosa did not conta ulcers. (6) Three more places showed similar skipped lesion (7) Mesenteric nodes were not enlarged. (8) There was no ev dence of tuberculos

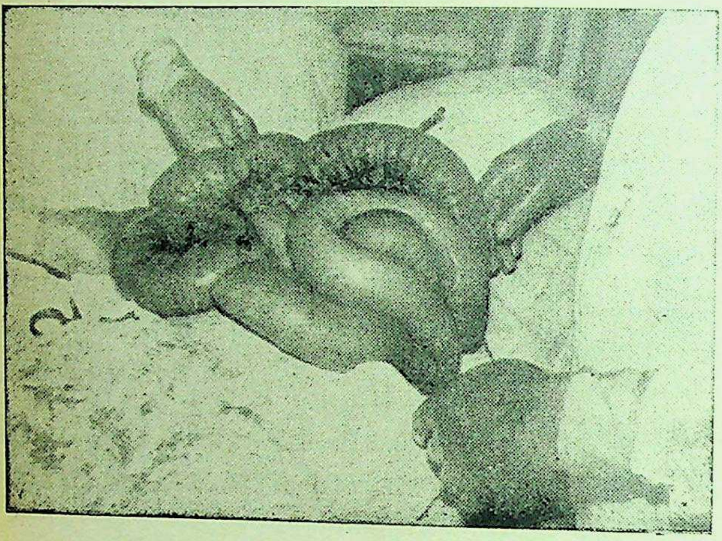

FIG. II. Gross-distension of Mid-gut

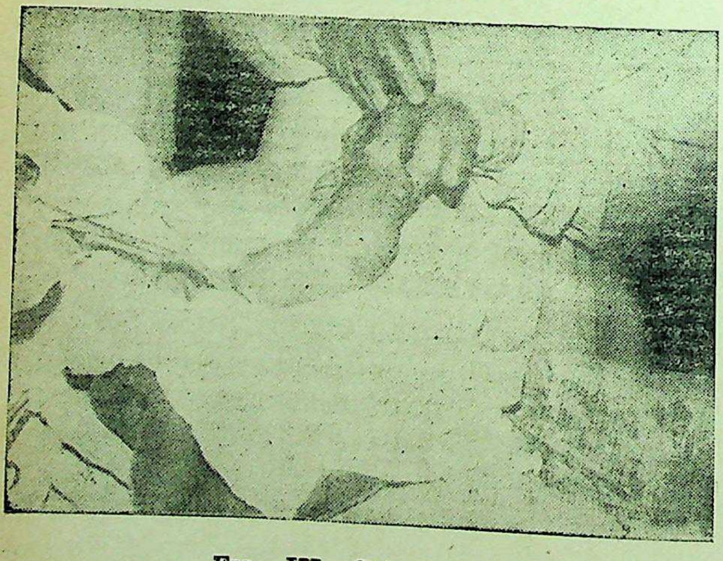

FIG. III. Skip lesions

With the abov findings at surgery i was concluded tha clinical diagnosis o Crohn's disease o ileum was feasibl

With the poor con dition of the patien with persistent hyp tension during sur ery and in the pres nce of three skipp lesions proximall resection could n be done and ili cæcal obstructio was overcome by a iliocolic anastamos

Histopathologica study of the spe men taken fro different sites sho ed submucosal a subserosal fibros Mucosa showed diff se non-specific infe tion suggestive o Regional enteritis.

Discussion.—Reg nal enteritis is a unpredictable gra lomatous response the submucosa to an unknown agent or agents, in whi damage is done by encroachment upon the lumen, scarring of th muscles, ulceration of the mucosa and necrotic break down wi fistula formation between loops of bowel, bowel and skin, a bowel and perirectal spaces. Much more common, however, is a recurrence and slow spread of the lesion to involve contiguous areas of the intestine.

With the peak incidence being between the ages of fifteen and thirty-five yrs. the condition occurs in both sexes equally and shows a familial tendency.

Examples of primary Crohn's disease of the colon, jejunum, duodenum and even of the stomach and anus, have been reported which justifies the newer term "Regional Enteritis".

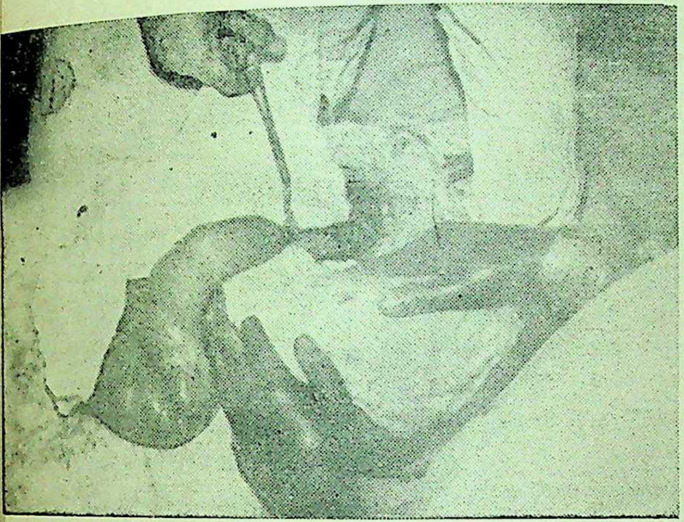

FIG. IV. Narrowing of terminal part of ileum

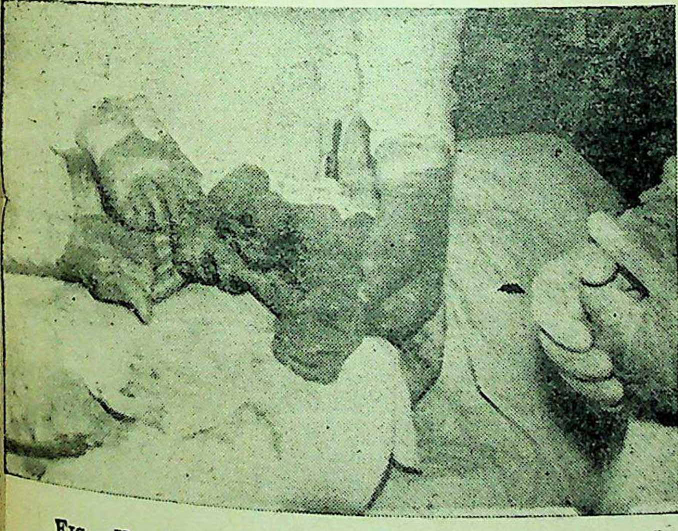

FIG. V. Thickened terminal part of ileum after deflation

No specific cause of this disease has been identified. The earliest lesion which is rarely minute is seen in the terminal ileum and more usually involves appreciable lengths of gut resulting (6 to 20 cms) in a swollen beafy glistening mass occasionally rather purplish but often intensely red. Large lymph nodes in the nearby mesentery are commonly noted in the acute phase. Submucosal hypertrophy is present. Skip lesions occur with normal intervening area remaining uninvolved.

Microscopically, the earliest changes are those of submucosal œdema, with prominent lymphoid hyperplasia, and superficial ulceration. The submucosal infiltration is made up mainly of plasma cells, lymphocytes and eosinophils. Early submucosal thickening is due to lymphœdema. The muscularis mucosa is hypertrophied.

Blackburn states in *Ackerrman's* text-book of Pathology, that "The primary lesion in regional ileitis is a specific hyperplasia of the lymphadenoid tissue of the submucosa, extending to regional lymph nodes. It gives rise to lymphatic obstruc and oedema which in turn causes ulceration and nonspe infection.

Acute regional ileitis occurs only in 5% of cases. symptoms and signs resemble those of acute appendicitis one exception namely diarrhoea, which almost invari precedes the acute attack. Patient may also present with sy toms of perforation, resulting in local or diffuse periton Chronic regional ileitis is the usual form of the disease. presents in the first stage with mild diarrhoea, intestinal c intermittent pyrexia. As a rule a tender mass can be felt in right iliac fossa. Occult blood and mucus is present in the sto Patients present with perirectal and perianal abscesses fistula.

The second stage is characterised by symptoms of acut chronic intestinal obstruction due to cicatrisation in the affe loop. In the third stage adhesions accompanied by slow per ation of the intestinal wall and abscess formation with inte or external fistulous tracts develop.

The subtype of regional enteritis presents a diffuse invol ment of the jejunum and ileum as described by Professor Cr

Professor Albert mendel off of John Hopkins Univer School of Medicine, states that "Definitive diagnosis on histol grounds is established under the microscope, although m surgeons can make an accurate diagnosis by inspection at operation table of the beefy reddish-to-bluish serosa in ac phase of the disease."

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HYPERTENSION TREATED BY SALT RESTRICTION :

Thirty-one patients with a diastolic blood pressure between 95 and 1 mm Hg were treated for two years with a diet involving a moderate restri tion of salt. The results are compared with those in a control group and a drug-treated group. Salt restriction reduced the diastolic blood press by 7·3 ± 1·6 mm Hg., a result similar to that in patients treated with an hypertensive drugs. In the untreated group the diastolic blood press rose by 1·8 ± 1·1 mm Hg. Most patients did not achieve the desired amo of salt restriction, and a stricter adherence to the diet might have caus further falls in blood pressure. Excessive salt intake is probably a ma cause of the epidemic of hypertension in "civilized" countries. In pers with a diastolic blood pressure between 90 and 105 mm Hg., salt restricti should be tried before drugs.—(*J.A.M.A.*, 21st July, 1978).

General Practitioners' Series * * *

CHILDHOOD TUBERCULOSIS

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PART II

(Continued from page 504 of the August, 1979 issue of the "ANTISEPTIC")

TREATMENT :—Views on the treatment of tuberculosis in children are diverse and have often led to a heated controversy. It has been appropriately said that the approach to chemotherapy of tuberculosis is still largely empirical, based not so much on the rationale of action of drugs, but on the results of controlled clinical trials. Unfortunately, the clinical trials in tuberculosis in children are not so wide-based and extensive as in the case of the disease in adults. Generally speaking, the basic principles of chemotherapy of tuberculosis in adults, including the intermittent regimens and short-term chemotherapy, should also rationally be applicable to the children in proportional doses to achieve desirable minimum inhibitory concentrations in the serum. However, in the very young children the proclivity for toxic reactions, particularly to the reserve group drugs, due to under-developed enzyme systems, is to be borne in mind. Mention is made later in this article on the use of proportionately higher doses of certain of the drugs.

The controversies originate primarily out of the paucity of precise diagnostic tools in detecting the childhood type of the disease and the consequent heavy dependence for diagnosis on clinical judgement. Secondly, opinions are divided on the drugs and their dosages to be used and also on the necessity of treating children whose sole manifestation is the "Mantoux positive" reaction. Furthermore, the criteria for what is called chemoprophylaxis are not very clear cut.

The vagueness of the symptoms and their occurrence in various other common illnesses and nutritional deficiencies in children, in India, as well as the indefiniteness of the clinical and radiological signs, have been earlier emphasized.

The views range from advocating isoniazid administration to asymptomatic children whose reaction to tuberculin suggests tuberculous infection, to that of insisting on definite diagnostic evidence in favour of the disease before putting the child on any antituberculous drug.

Drug administration.—The drug administration, usually with isoniazid alone, in the asymptomatic children with a normal chest skiagram and a reaction to tuberculin indicat of tuberculous infection is done under the name of "Second chemoprophylaxis", whereas that in asymptomatic children w a chest skiagram indicative of primary complex and a react to tuberculin indicative of tuberculous infection and in t unequivocal cases of tuberculosis is done under the name "treatment". Most of the children with primary complex a those whose sole manifestation is the reactivity to tubercu indicative of tuberculous infection, are given drugs more (of fear of the dreaded complications such as miliary a meningeal tuberculosis rather than out of sound scienti dictates. It may be prudent to keep these children under acti surveillance and to treat them at a later date if necessary. P sonal views in these cases vary widely and dogma often tak the better of reason.

Tuberculin conversion and drug administration.—The i of drug administration called "Secondary chemoprophylax in children whose only manifestation is the reaction tuberculin indicative of tuberculous infection, is based the premise that the organisms which lie dormant may fla up into an active disease which in children may take t form of miliary and meningeal tuberculosis in which t prognosis is still bad, inspite of all the modern drugs at han Most of these children grow up into normal healthy adults wi out suffering from tuberculosis. It is thus obvious that chem prophylaxis in all these children is a form of "investment wi out proportional beneficial returns". It is maintained that children who have a history of contact with a very infectio case and whose reaction to tuberculin is extensive, which m indicate a recent infection, chemoprophylaxis is strong indicated. In such cases it would probably be more rational keep them under close observation and to initiate appropri antituberculous treatment with multiple drugs as soon as sym toms and signs manifest themselves.

Primary complex and drug administration.—Another pr blem is about the drug administration in a child who is asympt matic but the chest skiagram is indicative of a primary compl and the tuberculin test is indicative of tuberculous infectio Here again, most of such children grow into normal healt adults without treatment and with the primary complex heali naturally. It is in this context that a differentiation is to made between "primary complex" where there are no sympto of the disease and "primary disease" where the primary compl is associated with symptoms of the disease. In cases the primary complex it would probably be prudent to keep t children under close surveillance and to treat with multiple dr at once if any evidence of disease presents itself later.

nevertheless argued that the rate of complication by disseminated tuberculosis in the younger age group is so relatively high in the cases of radiographically visible lesions, even without symptoms that chemotherapy is mandatory in all the cases. But the implication is that this may result in unnecessarily treating a very large number of cases to prevent disease in a few. If isoniazid alone is recommended in these cases it sets an unfortunate precedent for monotherapy in tuberculous lesions of uncertain activity.

Multiple drug therapy.—There is ample testimony in the history of antituberculosis chemotherapy that atleast two drugs to which the organisms are sensitive are essential for tackling tuberculosis and to prevent emergence of drug resistant strains Though it is maintained, in the context of monotherapy with isoniazid, that many isoniazid resistent strains lose their catalase activity, that their virulence was considerably attenuated, that the emergence of resistant strains is at a low level, and that the strains are thought not to have been clinically important, knowingly giving a chance for development of drug resistant organisms is not good medicine by any standard.

In cases of primary complex progressing to disease, and the other forms of tuberculosis in children a regular course of therapy starting with a multiple drug regimen is imperative. Depending on the nature, extent, and seriousness of the lesions, therapy has to be programmed. In mild cases, two oral drugs may be given and streptomycin may conveniently be omitted to save the child, the ordeal of the injections and the resulting psychological trauma. In severe cases an initial intensive therapy with three drugs such as daily streptomycin, isoniazid, and PAS for 6 to 8 weeks followed by a maintenance therapy with two drugs such as isoniazid and PAS is recommended. If drug resistance is suspected an appropriate combination of more than two drugs, depending on the assessment of drug sensitivity, is to be considered.

Two drug combinations.—*Isoniazid and PAS* :—Isoniazid and PAS, preferably given in a drink form such as Iso-Benzacyl or Iso-Benzacyl Forte tablets dispersed in buttermilk, or still better Pasinah-D (not yet marketed in India) which is sold in pædiatric packets with a choice of three flavours—black currant, raspberry and lime—for making a drink, is the most tested, safe and preferred combination of antituberculous drugs. The dose per day should be given divided into not more than two doses. It may even be better given as a single daily dose, if tolerated.

Isoniazid and ethambutol :—Isoniazid and ethambutol, though not relatively extensively used in children, is emerging as a promising combination of value whose therapeutic efficacy is in no way inferior to the above combination. However, caution is to be exercised regarding the dosage of ethambutol as excessive doses might result in visual impairment which may be diffic or impossible to be recognised and brought to the notice the physician by the young children. Despite expectatio to the contrary, experience in India indicates that the to effect on vision is of insignificant proportions. The single dai dosage, the small bulk of the drugs, and the considerably lo incidence of side-effects make the combination of isoniazid a ethambutol certainly more acceptable that that of isoniaz and PAS.

Isoniazid and rifampicin :—Isoniazid and rifampicin seem be a highly powerful bactericidal combination with an appr ciably low incidence of side-effects and toxicity. It is suggest that the combination sterilizes the mild lesions in six months a that for the rest of the period isoniazid alone may be sufficie No doubt, rifampicin is a strikingly powerful oral bacterici agent against tuberculosis, but wisdom demands that this exp sive wonder-drug which is associated with development of sing step resistant mutants should not be used as a routine but kept reserve for special cases and for fighting drug resistant tube culosis.

Isoniazid and streptomycin :—Isoniazid and streptomyc sulphate given daily is an excellent combination from the point view of therapeutic efficacy, but the parenteral route of admini ration of streptomycin for a long period is most abhorring to t child as well as to the parent resulting in premature discontin ation of therapy. Despite extensive use, administration isoniazid daily with biweekly streptomycin is to be discourag for in a considerable proportion of the cases, drug resistan develops. Ordinarily, after six to eight weeks of daily thera with streptomycin and isoniazid, the injection may be substitut by one of the other oral drugs, such as PAS or ethambutol.

Isoniazid and thioacetazone :—The combination of isonia and thioacetazone is as good as that of isoniazid and PAS, but t propensity of thioacetazone to cause frightening muco-cutane toxic reactions sometimes ending fatally, is a deterrent to its u in children though they may tolerate the drug better than adu The low cost of the drug and convenience of the dosage are t advantages, but the highly critical dose and the toxic reacti do not make it a commendable drug for use in children.

All the above combinations may be used in initial or ma tenance chemotherapy but not with impunity. Prudence shou dictate that competent expert opinion should be obtained wh including other antituberculous drugs and probably ethambu and rifampicin as well.

Dosage of the drugs.—It is generally believed that hi doses of the antituberculous drugs are necessary to treat tu culosis in children. As children tolerate certain of these dr such as isoniazid, streptomycin, thioacetazone, etc. better than adults, advantage is taken of this fact by administering such drugs in slightly higher doses. However it is pharmacologically illogical to administer doses proportionally higher than those used in adults.

Isoniazid.—In a publication sponsored by the Tuberculosis Association of India, isoniazid is recommended to be given in a dose of 20mg. to 40 mg/kg/day. In all probability such a high dose of 40 mg. is unwarranted. A dose of more than 10 mg/kg/day is not generally necessary even in the severe forms of the disease, and in mild cases it could be reduced even to the level of 3 mg/kg/day when used in combination with another drug or drugs. A dose between 5mg. to 10 mg/kg/day may be optimal subject to a mximum of 300 mg. The dose may be given in two divided doses, but it is preferable to give it in a single daily dose.

PAS.—PAS may be given in a dose of 300 mg/kg/day subject to a maximum of 10 mg. per day, by mouth on full stomach and always coinciding with the time of administration of isoniazid, in not more than two divided doses. It is preferable to give the two drugs in a single preparation to obviate the preferential omission by the child.

Ethambutol:—Ethambutol may be given in a dose of 20 mg/kg/day subject to a maximum of 1200 mg. in a single daily oral dose along with the single daily dose of isoniazid at bed time. The drug should be discontinued at once should any visual disturbance is noticed, lest permanent damage should occur.

Streptomycin:—Streptomycin may be given in a dose of 30 mg/kg/day subject to a maximum of 0·75 g. in a single intramuscular injection daily at any time of the day.

Thioacetazone.—Thioacetazone may be given orally in a dose of 2mg. to 5 mg./kg /day subject to a maximum of 150 mg. in two divided or a single dose alone with isoniazid.

Rifampicin.—Rifampicin may be given orally in a dose of 15 mg./kg./day subject to a maximum of 600 mg. in a single daily dose along with the single daily dose of isoniazid. The need to use a combination of rifampicin and PAS is very remote. However, if such a need arises an interval of about six hours may be maintained between the doses of the two drugs, for simultaneous administration may impair the absorption of rifampicin.

Duration of therapy.—The duration of the treatment should ordinarily be for one year. In some cases where the response is not adequate or the lesions are extensive or in the disseminated forms, or in bone and joint tuberculosis, the duration is to be extended to 18 month or more. In the case of the three drug regimen which includes rifampicin it may be sufficient to give the drugs for 6 to 9 months.

Corticosteroids.—In the disseminated forms such as mili and meningeal tuberculosis, and in cases of lung atelecta allergic pneumonitis, and caseous pneumonia, usually conseque to hilar lymph nodal involvement, and when serous caviti are involved resulting in fluid formation, administration of corticosteroid such as prednisolone in a dose of 2 mg /kg /d in children of less than 2 years of age, 1·5 mg. in those of 2 10 years and 1 mg. in those of 10 to 15 years which is taper off over 2 to 3 months is considered to be invaluable.

Nutrition :—A good nourishing diet is adequate. It is exp dient to advise those belonging to the lower economic group refrain from falling a prey to the food fads in tuberculosis. F instance expenditure on apples in parts of the country whe they are costly is wasteful. Instead, they may be encouraged eat locally available nutritionally rich but price-wise che items such as groundnuts, germinating bengal gram seeds, e There is no great advantage in "administering" egg in its r form to the highly reluctant kid. It may rather be given in t cooked form which the child may relish better.

Prevention.—*Chemoprophylaxis :*—It has long been thoug that chemoprophylaxis, by administering isoniazid alone in daily dose of 10 to 20 mg./kg /day for one year in children wh have not contracted the disease but are prone to it can redu the incidence of the disease in them. Administration of t drug to children with a reaction to tuberculin indicative of tub culous infection is called "secondary isoniazid chemoproph laxis" and in those with a reaction not indicative of tuberculo infection it is called "primary isoniazid chemoprophylaxis." Th implications of the secondary chemoprophylaxis have alread been considered in the foregoing pages. To suggest that chem prophylaxis should be given to all the children with a reaction tuberculin indicative of tuberculous infection, in India, borde on the absurd. The usefulness of chemoprophylaxis in the called "strong reactors" (meaning probably an average diamet of induration of more than 15 mm.) who are otherwise normal open to speculation.

Except perhaps in infants in whom a *primary* chemoproph laxis may be warranted, there is no justification for chemoproph laxis, generally in countries like India where it is difficult to pr vide drugs to treat even the bacillary cases. It is more important ensure BCG vaccination, to improve the nutritional status of t children, to adequately treat the common illnesses of childho including measles, whooping cough, respiratory infections, e and to prevent tuberculous infection by imparting knowledge simple cough hygiene measures in all the bacillary cases, th to launch on a mass chemoprophylaxis campaign, for chemop phylaxis, after all, doesnot ensure sterilization of the lesio

However, in certain specific situations where the infection has a high proclivity to progress into disease, such as associated diabetes mellitus, continued exposure to a known infectious case, recent tuberculin conversion with continued risk factors such as malnutrition, ill ventilation, croweded living, etc., a limited use may be made of chemoprophylaxis.

Primary chemoprophylaxis is probably, indicated in infants of infectious mothers, for many of these cases come from a very low socio-economic class wherein the advice on hygienic measures, especially the cough hygiene measures, is not followed and wherein isolation of the infant is neither practicable nor advantageous for various reasons. Furthermore, it is a disservice to advice against breast-feeding in these infants. If available, isoniazid resistant BCG is recommended for these infants along with isoniazid chemoprophylaxis.

B.C.G:—There has been a raging controversy all over the world about the efficacy of BCG in preventing tuberculosis. Unfortunately, BCG does not confer the degree and definiteness of protection against disease as is the cases with vaccines like that against smallpox. The reported preliminary findings of the Trivellore study under the Tuberculosis Prevention Trial Unit did certainly deepen the controversy on the efficacy of BCG vaccination in preventing tuberculosis. It would be a pity if the drive to vaccinate the eligible population gets bogged down in the mire of controversies. Though the opinion on the efficacy of BCG seems to be divided, there is now a general agreement that it is not harmful. So long as incontrovertible evidence is lacking to conclude that BCG is ineffective, prudence demands that we, in India, should not spare any effort to give potent freeze-dried BCG vaccination to as many eligible children as possible. It is preferable to vaccinate a child after the age of one year if the child comes from the higher socio-economic class wherein the chances for the infant to be exposed to the infection are low. In the low socio-economic class, the vaccination is to be done soon after birth,

Concluding remarks.—This article does not purport to be a coverage on all aspects in detail of tuberculosis in children, but only certain facets of the disease in children are highlighted. There seems to be a trend to label children as "Mantoux Positive" and "Primary Complex" and to prescribe an-antituberculous regimen which mostly is not followed through to the end. A high degree of clinical judgement is called for in these cases, for the line of demarcation between tuberculous infection and tuberculous disease is very thin and the tools available in the diagnosis in children are imprecise. Though the current epidemiological thinking seems to indicate a propitious trend in the younger age groups, the problem of tuberculosis in children needs better understanding, as tuberculosis is still rampant in India and children constitute 40 per cent of the population.

Acknowledgement.—The author is thankful to Mr. C. Sellakutty for his secretarial assistance.

NEONATAL GONOCOCCAL OROGASTRIC CONTAMINATION

Handsfield *et al* have reported on the incidence of gonorrhea found in a selective group of mothers and newborns. They found that 2·7% of these new borns had gonococcal orogastric contamination, 12·2% of mothers had symptomatic or asymptomatic gonococcal vaginitis, and the presence of gonorrhea is associated with an increased morbidity of the newborn. The Center for Disease Control recommends that women at risk for gonorrhoea should have a screening culture in the first and third trimester of pregnancy. In practice, the third-trimester culture is frequently overlooked. Because of the lack of symptoms in the mother who is a carrier of gonorrhea and because of the increased maternal and fetal morbidity associated with gonococcal colonisation, an endocervical culture for gonorrhea should be routinely taken in the third trimester. The need for the importance of screening for gonorrhea in the first and third trimester of pregnancy is emphasised.—(*J.A.M.A.*, 1st September, 1978).

Question.—What is the treatment for persistently sweating feet?

Answer.—Medical treatment for localised hyperhidrosis with topical applications has been notoriously unsatisfactory until the relatively recent introduction of 20% aluminium chloride hexahydrate in absolute alcohol, recommended originally by Hurley and Shelley in 1963 for axillary hyperhidrosis. Even for the latter condition this highly effective treatment has come into wider use only recently. This application is also suitable for sweaty feet, but can cause temporary skin irritation. Twenty or 40% formaldehyde solution, applied two or three times a week, is also effective but often gives rise to irritation and dermatitis of the toe clefts (not to mention the applying fingers) unless special precautions are taken. Glutaraldehyde 10% in a buffered solution pH 7·5 applied on alternate evenings is moderately effective but stains the skin yellow, and may occasionally induce allergic hypersensitivity. Electrophoresis with tapwater helps some patients, as do various solutions of Poldine salts applied directly or by electrophoresis. The most effective and only permanent treatment of excessive sweating of feet is bilateral lumbar sympathectomy. In really severe plantar hyperhidrosis it is the treatment of choice after 20% aluminium chloride hexahydrate has failed to give acceptable relief.—(*B. M. Journal*, 25th Nov. 1978).

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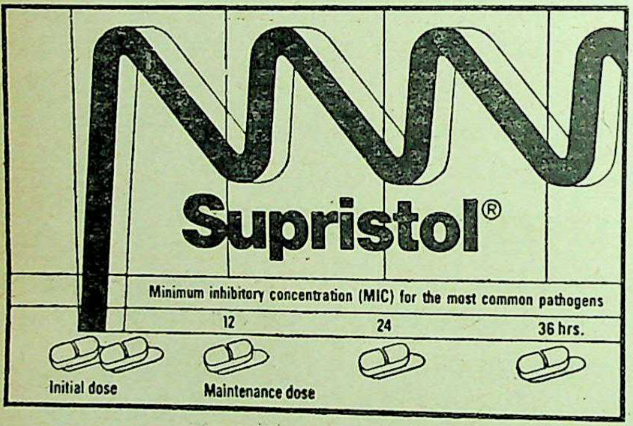

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The Antiseptic

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Editorial

SETTING UP OF SEPARATE BURNS UNITS IN ALL MAJOR HOSPITALS IN TAMIL NADU

INAUGURATING the Burns Association of India (Madras Branch) MR. K. MANOHARAN, our State Finance Minister, announced last month that separate Burns Units will be set up in all important hospitals in the State for the treatment and resuscitation of all burns victims. There is already a 12 bed strength special burns ward functioning in the Government General Hospital, Madras. The news referred to above is indeed welcome as it fulfils a long-felt want.

It is estimated that, normally, the incidence of cases of burns injuries will be about 2500 a year, of which the city alone accounts for nearly 500 cases. There has been a phenomenal increase in the incidence of burns cases due to accidents arising out of the use of inferiour brand pressure stoves, careless and negligent use of even the ordinary kerosene stoves, as for example, sprinkling of cold water over the burning stove to stifle the flame, feeding the stove with kerosene when the stove is burning (without extinguishing it in the first instance and allowing some time for the burner to cool), etc., A word of caution seems necessary. It should be ensured that the pressure stoves used are of a reliable make, that the stoves are not pumped to the maximum extent possible, just enough to generate a blue flame. Another major contributory factor in these fire mishaps is the wearing by the housewives of inflammable synthetic clothing like nylon and terylene sarees, while engaged in cooking. It is a well known fact that most of these burns cases arise out of sheer negligence or carelessness. Large scale fires in many slum dwellings with thatched roofings reported in the Newspapers, start invariably, out of a spark from an unattended oven or by the accidental fall of a naked chimney light. Education of the public against these hazards through news media and through specially prepared pamphlets distributed to the house-wives may definitely have a beneficial effect.

British doctors at the Burns Research Institute, Birmingham, U.K. had already developed, and successfully used a new vaccine more effective than antibiotics in protecting the wounds against infection in cases of large scale or extensive burns. T protective vaccine has been developed from killed bacteria of main type of pseudomonas. Since at present most of the b teria have developed resistance to antibiotics, the new vacc should be considered as really conferring a boon. It is presum that these vaccines are being, or will be used in the hospitals.

As the prompt use of these vaccines create sufficient imm nity against the spread of infection almost within 24 hours fr the time of the accident, they are very useful in combating s cessfully the development of infection which sets in most of t cases. Considering the large incidence of burns cases, par cularly during the current year we venture to suggest that t Central or State Government should think of starting a Bur Research Unit at the Madras Medical College on the lines of t Birmingham Unit in the U. K., to develop such vaccines to p tect against other types of bacteria especially against those wh are known to be resistant to other specific antibiotics available India. It has been reported in the Journal of the Medical Asso ation of Thailand (Oct. 1978) that "Solco Seryl" a deprotenis extract of the blood of calves which contains serum amino aci hydroxy and keto acids etc. was used successfully in the trea ment of the inflammatory phase of the wounds caused by bur Solcoseryl jelly was applied on the surface of the clean wou and layers of sterile gauze dressing used to cover the surfa It is claimed that this may be used as a primary topical wou dressing for second degree burns. This may be given a tri It should be recognised that all Burns Units attached to t hospitals, work hand in hand with the Plastic Surgery Depar ment which should be near at hand, and that further, all su units may have to be manned by skilful surgeons trained in sk grafting so as to minimise the permanent damage caused to the unfortunate burns victims.

PSEUDOMONAS VACCINE AND BURNS

Pseudomonas aeruginosa is a not infrequent contaminant of wounds and burns and one to be feared. The polyvalent Pseudomanas vaccines (PEVOI) prepared from surface antigens of 16 serotypes has been given a trial in a hospital burns unit in New Delhi with considerable success (Lancet 1978) 2,401). Conditions at the hospital seem rather like those in some of ou hospitals (Over crowding, poor nutrition, delay in seeking hospital care) The vaccine was given within 72 hours of burning in the recommende human dosage on days 0, 7, 14 to adults with 15—50% and to children with 5—30% burns. All 18 vaccinated patients survived, whereas 8 of 20 un vaccinated died. Most of the unvaccinated patients who died did so within 6 days of burning from gram negative septicæmia.—(*S. African Medica Journal*, 16th Dec. 1978).

GLEANINGS

MEDICINE AND THERAPEUTICS

Breathing and control of heart rate.— (*British Medical Journal*, 16th Dec. 1978).

The advice "to take frequent deep breaths" given to one close to fainting has physiological justification. Recent work on bradycardia has shown that the various reflexes that evoke it operate only during the expiratory phase of breathing while inspiration may increase the heart rate. The heart is slowed when a rise in arterial pressure stimulates the baroreceptors of the carotid sinus, or when a fall in arterial oxygen tension stimulates the chemoreceptors of the Carotid bodies. Slowing is evoked also through more complex reflexes during nasopharyngeal stimulation or when pressure is applied to the eyeballs (the oculo cardiacreflex) or the face is immersed in water (the diving reflex). These reflexes have little or no effect on heart rate during the inspiratory phase of breathing but are confined to the period of expiratory air flow and the pause between breaths. The effect holds true whether the bradycardia is brought about by vagal excitation or by sympathetic withdrawal. The actions of inspiration in inhibiting reflex bradycardia is sometimes produced by the activity of inspiratory neurones in the respiratory centres even when the thorax and lungs do not move. The inhibition may be produced equally well. by stimulation of intrapulmonarv stretch receptors during lung inflations even when such inflations are imposed at a time, when the inspiratory centres are silent. Usually, both inhibitory mechanisms occur together during inspiration, so that the inspiratory block of reflex bradycardia is doubly assured. Sinus arrhythmia occurs because an otherwise steady source of vagal tone is intermittently interrupted by the inhibitory effects of successive inspirations, so that vagal impulses flow towards the heart and slow it only during expiration. More frequent and most powerful interruption of vagal tone could be expected during hyperventilation and would help to account for the accompanying tachycardia. Since breathing inhibits the reflexes that evoke bradycardia, all attempts to increase vagal tone-whether by carotid sinus massage, pressure on the eyes, applying water to the face should be attempted while the patient voluntarily holds his breath. Ideally, breath holding should occur in the end-expiratory phase. Where bradycardia becomes excessive, as in simple vasovagal faints or during manipulations in ophthalmic and nasopharyngeal surgery, it should be preventable by voluntarily increased breathing or by increasing the frequency and amplitude of imposed lung inflations. Even the glass of water given to one who feels faint makes good physiological sense, for swallowing is associated with intense bursts of firing in central inspiratory neurones and this central inspiratory activity inhibits vagal excitation and relieves bradycardia.

Etiology of myocardial ischemia.— (*J.A.M.A.*, 27th Oct. 1978).

Question.—Please discuss the interrelationships, if anv, among ST Segment depression, diminution in myocardial blood flow, and the inception of the subjective sensation of pain.

Answer.—The consensus of investigators in the field is that myocardial ischemia can result from one of two mechanisms;

1. With augmented cardiac mechanical activity (and energy demand) required blood flow in segment or in the subendocardial layer of a portion of the heart is unable to increase in proportion to this demand. This can be the result of critical atherosclerotic obstruction of a given coronary artery or to alterations in hydraulic factors; which may compromise perfusion of the deep or subendocardial layers of myocardium, as occurs with aortic stenosis or other major hypertrophic states.

A primary reduction in myocardial perfusion, usually engendered by spasm of a coronary artery (so-called Prinzmetal's variant angima) may occur. This change may be so profound as to adversely affect both electrical and mechanical function of the heart. Curiously, these ischemic events have as a first manifestation myocardial lactate production; second ECG repolarization change, and third, a variable development of the sensation of pain. Many investigators have shown that approximately 50% of all electrocardiographically detected ischemic episodes are devoid of pain. Thus, the physician must continuously be on guard so as not to ignore ECG changes representative of ischemia. Other factors can compromise blood flow, including augmented transmural systolic pressure, as with arotic stenosis, and augmented intramyocardial diastolic pressure, as when there is congestive heart failure with elevated intracavitary left ventricular diastolic pressure. In addition to neural influences, one must be aware that some by-products of prostaglandin metabolism have the capacity to dilate or constrict coronary smooth muscle at both the large and small vessel level.

Why are asthmatics allergic ?—(*Medical Journal of Australia Special supplement*, 2-12-1978).

Dr. J.L. Howell defined the disease thus. "Asthma is not a disease entity but one form of clinical presentation of a variety of disorders of the bronchi in which marked changes of bronchial caliber may occur over short periods either spontaneously or in response to treatment". Asthma may also be defined as "An abnormality of the control of airway calibre resulting in marked narrowing in response to a number of different stimuli". Majority of people with asthma are allergic; that is, they have immediate hypersensivity reactions to common allergens and it is an observation that exposure to a known allergen produces an acute attack. Thus, asthma has been regarded as a bronchial manifestation of allergy. It is now established that the airways of asthmatics have an increased response to mast cell mediators such as histamine, prostaglandin F2α and also to other irritants. This abnorm called bronchial hyperactivity is fundamental abnormality in asth and, as far as can be assessed, it is dependent of the allergic status of patient. There is no correlation b ween the degree of allergy and degree of bronchial hyperactivity there is no evidence that the mediat released from the allergic process the cause of bronchial hyper-activity.

Oesophageal reflux and its myths. (*British Medical Journal*, 6th Jan 1979).

Gastro œsophageal reflux is one the common causes of dyspepsia, is often associated with a hiatus h nia in an X-ray film. Price and Cas conclude that the presence of a his hernia bears only a fortuitous relati to the upper gastro-intestinal sym toms, which are in fact due to ref This then, should be the focus of dia nostic efforts and of treatme Heartburn and regurgitation are t hall marks of reflux of gastric conte containing acid and often bile into t œsophagus. Atkinson found go correlation between the clinical e dence of reflux and manometric e dence of a weak lower œsophage sphincter. The antireflex mechani of the stomach was further explor by Cohen and Harris, who confirm the association between weakness the sphincter and symptoms of reflu and also showed that the presence of sliding hiatus hernia does not by its weaken sphincter tone The practi lesson is that the clinician shou manage initially on a medical regim provided that no stricture is pres causing dysphagia. Simple measur as correcting obesity, avoiding stoo ing, and cigarette smoking, and slee ing with the head of the bed raise give rewarding results and the goal medical treatment should be to stren then the lower œsophageal sphincter.

Cholinergic drugs, such as bethan diminish reflux and provide defi benefit in patients with chronic hea burn. Antacids are still the ba treatment for œsophageal pain a give prompt relief. As well as reduc the irritant potential of refluxed g tric contents, they also increase the production of gastrin by the antrum, the raised serum gastrin concentration acting to improve sphincter tone. So far metoclopramide has proved to be the most effective drug for tightening the sphincter and controlling reflux, through the H_2—receptor antagonists.

Weight and blood pressure.—(*J.A.M.A.*, 6th October, 1978).

The association of over weight with elevated hypertension was found to be as follows: (1) *Strong*: For younger screenees, overweight was associated with at least double the prevalence of diastolic B/P of 95 mm. Hg. and higher or of being a hypertensive person receiving therapy. For older screenees prevalence of hypertension was 50% higher among over-weight persons than among normal-weight persons and double that found in underweight persons.

(2) Consistent. In every age-sex-race group overweight groups had a higher proportion defined as hypertensive than did normal weight groups, and the latter in turn had a higher percent hypertensive than did under weight screenees.

(3) Greater for successively higher B/P levels. For any cut-off point used to define elevated B/P, overweight screenees always had a higher prevalence of such elevation than found in normal-weight groups. For younger screenees the prevalence ratio was 2 : 1 for diastolic B/P of 90 mm. Hg. or greater and 3·7 for also diastolic B/P of 110 mm. Hg or greater. This gradient was present also for older screenees although less steep (1·5 to 2·2). The strong and consistent association of over weight and hypertension demonstrated in the large-scale study is in agreement with data from other cross-sectional investigations. It is also in keeping with results from prospective studies showing that both obesity in young adulthood and weight gain from young adulthood to middle age is associated with increased risk of becoming hypertensive. Recent studies indicate that weight loss is effective in reducing B/P in a sizable proportion of obese, hypertensive patients. Overweight is probably one factor in the complex of causes of high B/P in a sizable proportion of obese hypertension persons–mechanism unknown.

PAEDIATRICS

Management of Children with cleft lip or palate.—(*South African Medical Journal*, 9th December 1978)

Repair of the cleft palate is necessary to provide a mechanism for normal speech, hearing, dental occlusion, swallowing and separation of the oral and nasal cavities while interference with facial bone growth is reduced to a minimum. Of these normal speech is the most important and the most difficult to achieve. These children invariably experience difficulty with feeding. Individual feeds are often laborious, time-consuming low in volume. One of the easiest methods is to enlarge the hole in the bottle teat, so that minimum suction is necessary. Two teats are placed upon each other so as to increase the length of the teat. Suction is then obtained by the tongue acting against the posterior pharyngeal wall.

Surgical intervention is only indicated if an adequate airway cannot be maintained by nursing and positioning. By careful nursing an adequate airway can usually be maintained. Timing of surgery is difficult and debated. Timing for operation includes one of the following approaches:—

(1) The time honoured practice of repairing the lip when the child is about 3 months of age and thriving. and repair of the hard and soft palate at 18 months is still most frequently favoured.

(2) The lip only is repaired at about 3 months of age, and the soft palate only when the child is about 12–18 months old. At this procedure, velar musculature is repositioned, but the hard palate is not touched. There thus remains a defect in the hard palate which is occluded with orthodentic prostheses, until closure of the defect is undertaken from about 5 years of

age and usually when the child is 10–12 years old.

(3) Complete repair of the lip, hard palate and soft palate can be undertaken at a very early age as a one-s procedure; repairs of this nature been performed in the neonatal pe at about 3 months old.

OBSTETRICS AND GYNAECOLOGY

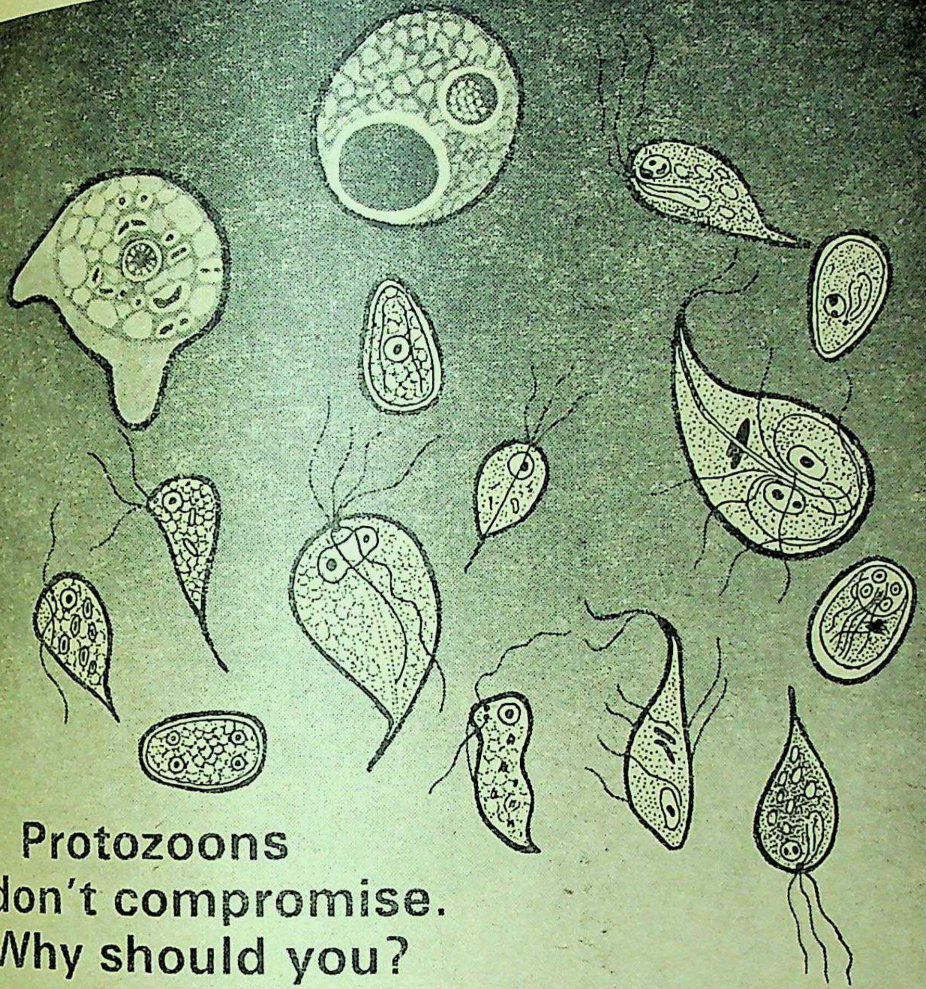
Ovarian cancer: diagnosis and treatment.—(*Texas Medicine*, Feb. 1979).

Early diagnosis is the most effective way for reducing the high mortality associated with ovarian cancer. Palpation of what would be a normal-sized ovary in a pre-menopausal woman suggests ovarian tumor in a post-menopausal woman or a prepubertal child. Ovarian cancer should be considered when a 40 to 60 year old woman or a prepubertal child presents with persistent unexplained gastrointestinal symptoms. Gibbs has suggested that a radical approach to pelvic surgery in women over 35 could reduce the incidence of ovarian carcinoma by 20%. Barber and Graber in 1971, reported the "postmenopausal palpable ovary syndrome" an early sign of ovarian cancer, that has been most valuable in diagnosis. The onset of this disease is commonly so insidious that it is difficult to identify any symptom complex until the lesion has spread throughout abdominal cavity; only 2% of women with ovarian neoplasms are totally asymptomatic. Minor symptoms must not be ignored. Most common symptoms are abdominal distension, constipation or alteration in bowel habits or palpation of an abdominal mass. Of all ovarian tumours, 90% are of epithelial origin. Recent data from (NC I) indicates that after surgery, multidrug chemotherapy is better than single alkylating agent alone in advanced tumours. Chemotherapy and irradiation combined have not proven to be any more successful than either used alone in indicated circumstances, and in fact, many have reported an increase in morbidity when both are given together. Any ovarian enlargement greater than 6 cm. must be looked upon as neoplastic, though not necessarily, malignant. Any palpable ovarian tumor in a patient over age 40, requires prompt treatment.

Assessment of X-ray pelvimetry in management of labor.—(*West Verg Medical Journal*, Oct. 1978).

There has been increasing con about the effects of radiation expo of the human fetus in utero. I important to re-evaluate the role diagnostic, radiologic procedures the care of the parturient. The of X-ray pelvimetry is a controver one. Some have condemned the p cedure as unnecessary and pos harmful. Other consider it indispe able.

The incidence of operative deli in patients referred for pelvimetry higher. Caesarean sections were in 244 of 833 patients. The mean weight of babies born by Caesar section was lower than in babies delivered vaginally. The autho theorised that when an obstetri seeks X-ray pelvimetry on a pati it is not necessarily because the pati has a small pelvis. It is probably cause he suspects the patient may problems in labour. This is confir in a review of 200 patients. Han conducted a study of 300 patients had X-ray pelvimetry. He concl that in only 5% of that group was X-ray pelvimetry necessary. He gested, discontinuance of X-ray p imetry. There is experimental statistical evidence which display potential risk inherent in fetal posure to X-ray, such exposure b correlated with an increased incide of malignancy in infancy and ch hood. In review, it is not desir to totally eliminate X-ray pelvime It did identify 22 patients who dysfunctional labor associated an inadequate or border line p capacity. X-ray pelvimetry shou reserved for those who are in a labor and have displayed dysfuncti labor.



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Kielland's forceps association with a neonatal morbidity and mortality.— (*British Medical Journal*, 6th January 1979).

The incidence of certain neonatal complications connected with the use of Kielland's forceps was analysed in live-born singleton babies. The neonatal mortality attributable to the use of the forceps was 34·9 per 1000. Incidences of delayed onset of respiration (17·4%) birth trauma (15·1%) abnormal neorological behaviour-namely, apathy or irritability or both (23 3%) significantly exceeded those in a matched group of babies born spontaneously. Fetal asphyxia played a major part in the ætiology of neonatal complications. Babies on whom Kielland's forceps was used, had a significantly greater incidence of abnormal neurological behaviour even in the absence of fetal asphyxia. (14·3%) and in all of these babies, the abnormal behaviour was transient and did not necessitate admission to the special care baby unit.

The mortality rate was three fold greater after the use of rotational forceps deliveries than after occipito-anterior forceps deliveries. Some facial bruising from the use of Kielland's forceps is acceptable and difficult also to quantify. The two fold greater incidence of jaundice in the study group was probably due to greater incidence of bruised babies from the use of forceps.

All babies in the study who developed abnormal behaviour in the absence of preceding fetal asphyxia were normal by 7 days. and it is speculative that the use of Kielland's forceps caused transient cerebral œdema.

Neither maternal height nor the infant's birth weight or occipto frontal head circumference influenced the occurrence of neonatal complications. The results also suggest that neither the speed of cervical dilatation nor the timing of engagement of the fetal head is of help in predicting the occurrence of neonatal complications after the use of the forceps,

Factors significantly associated with Kielland's forceps were primiparity, short maternal stature, induction of labour, late engagement of the fetal head, low ratio of maternal height to fetal occipitofrontal head circumference, slow dilatation of the cervix in labour and the use of epidural analgesia in labour.

The findings support a contribution of cephalopelvic disproportion in the genesis of malposition, and when associated with slow dilatation of the cervix delivery should be expedited. Long term follow-up studies are needed before the role of Cæsarean section in reducing morbidity associated with malposition can be properly assessed.

BOOKS RECEIVED

"Hospital acquired infections—Guidelines to laboratory methods"—By Mr. M. T. Parker, Pp. 63; M/s. World Health Organization, 1211, Geneva-27, Switzerland.
[Price: Sw. fr. 8/-

"The Menopause Manual—A women's guide to the menopause"—By Dr. Wulf H. Utian, Pp. 112; M/s. B. I. Publications, Promotion Department, 359, Dr. D. N. Road, Bombay 400 023. [Price: £ 2·95/-

"Bedside Diagnosis"—By Dr. Charles Steward and Dr David Mattingly, Pp. 358; M/s. B. I. Publications, Promotion Department, 359, Dr. D N Road, Bombay-400 023.
[Price: £ 7·95/-

"Drugs and Pharmacology for Nurses"—(Seventh Edition) By Dr S. J. Hopkins, F.P.S., Pp 320; M/s. B. I. Publications, Promotion Department, 359, Dr. D. N. Road, Bombay-400 023. [Price: £ 3 75/-

"Poliomyelitis—A Guide for developing countries"-(ELBS) By Dr. R L. Huckstep, C.M.G., M.A, M.D, F R C.S. (Edn), F.R C.S., (Eng), F R A C.S, Pp. 280; M/s B. I. Publications. Promotion Department, 359, Dr. D. N. Road, Bombay-400 023.
[Price: £1 50/-

"The Investigation of the Surgical Patient" (Arnold).—By F.C. Smiddy, M.D., Ch.M., F.R.C.S., Pp. 262; M/s. B.I. Publications, Promotion Department, 359, Dr. D.N. Road, Bombay-400023. [Price: £ 17·50

"Training and utilisation of auxiliary personnel for rural health teams in developing countries—Pp. 35; M/s. World Health Organisation, 1211, Geneva-27, Switzerland.
[Price: Sw. fr. 5/-

"Safe use of Pesticides"—Pp. 44; M/s. World Health Organization, 1211 Geneva-27, Switzerland. [Price: Sw. fr. 5/-

"First Aid—to the Injured, Nursing and Bandaging"—(Two copies)—By L. K. Ganguli, B.Sc., M.D., M.R.C P., and A.K. Ganguli, M.Sc., Pp. 102 ; M/s. Academic Publishers, 5-A, Bhawani Dutta Lane, Calcutta-700073. [Price : Rs. 5/-

"Mathematics in Nursing"—(Fifth Edition) —By Pamela, M. Jefferies, S.R.N., R.S.C.N., R.N.T., Pp. 214 ; M/s. B.I. Publications, Promotion Department, 359, Dr. D.N. Road, Bombay-400 023. [Price £ 0·75

"Cardiology for Students"—By Max M.D., F.R.C.P., Pp. 330 ; M/s. B. I. cations, Promotion Department, 359, D.N. Road, Bombay-400 023.

Price :

"Psychiatric Nursing"—(First Edition) Annie Altschul, B.A., (Lond), M.Sc., S.R.N., R.M.N., R.N.T., and Ruth Simp R.M.N., R.G.N., Dip, N. (Lond), R.N.T., 384; M/s. B. I. Publications, Prom Department, 359, Dr. D. N. Road, bay-400 023. [Price : £ 0

NEWS AND NOTES

VI Asia Pacific Congress on Diseases of the Chest

November 18—22, 1979, Bombay

[Sponsored by the International Academy of Chest Physicians and Surgeons —affiliated with the American College of Chest Physicians]

This Congress will discuss various medical and surgical aspects of heart and lung disease. There will be plenary sessions, symposia and free papers. For further information write to Dr. Aspi R. Billimoria, Secretary General, VI APCDC, L. D. Ruparel Medical Centre, Dr. Annie Besant Road, Worli, Bombay-400 025. (India)

Eye Care Magazine

The publishers of the first professional magazine, for the layman on the care of eyes—EYE CARE—have decided to set aside 100 copies of the Inaugural Number to be supplied free to recognized school, college and public libraries, and medical colleges on 'first come first served' basis.

Requests may be made to the editor Dr. Narendra Kumar, Post Box 2812, New Delhi-110060

Cipla Award in Cardiology

The Chemical, Industrial and Ph maceutical Laboratories Ltd., Ci announce the institution of an ann *Cipla Award in Cardiology* open to Indian nationals below 60 years of currently residing in India. The aw consists of a Prestige Certificate a cash component of Rs. 5,001/. T award is designed to encourage publicise meritorious work in the f of cardiology.

Members of the Medical Profess are invited to submit nominations the *Cipla Award in Cardiology*. E nomination should contain comp hensive professional bio-data of t nominee, together with a complete l of published works, with spec reference to research publicati teaching experience, national/Inter tional/awards / honours / membershi fellowships. The proposer/propos should identify their choice of nomi to be considered for the award. copies of each nomination prop should be forwarded within two mon of the date of this advertsement to.

The Medical Consultant, Departme Cipla Award in Cardiology Cipla, Bellasis Road, Bombay-400 008.

REVIEWS OF BOOKS

"Elements of Medical Genetics"—(Fifth Edition) By Dr. Alan E. M. Emery, M.D., Ph.D., F R C.P., (E), F.R.S , (E), Pp. 252; Published by: M/s. B. I. Publications, Promotion Department, 359, Dr. D. N. Road, Bombay-400 023. [Price : £ 3·95 or Rs. 68·55

In this era of preventive medic one important responsibility of t medical men is to min'mise expe congenital malformations thro marriage counselling on the basis the genetic make-up of the partn In addition the mounting hazards radiation and the greater use of radio active substances in the investigation and management of various illnesses, requires the physician to equip himself with a fundamental knowledge of medical genetics. To provide this information to the keen physician, this book is an ideal one.

On perusing this book, the reader can really proclaim that genetics is not a dull subject since the author has made reading easy and interesting. The chapter on "Genetic factors in some common diseases" where diseases affecting modern society like diabetes, peptic ulcer, hypertension and cancer have been explained on a genetic basis and the chapter on "pharmacogenetics" where relationship or hereditary disorders to altered drug response has been explained, are really very interesting ones. The last two chapters have been devoted to marriage counselling and radiation hazards. Earlier on in the book the author has conveyed to the reader a basic knowledge of genetics wherein details of the behaviour of chromosomes, their biochemical make up and the abnormalities are all given. The author has also described the laws and codes utilized by scientist in the field of genetics and has used this new science to explain many medical conditions.

This book however would be specially useful only to those who are anxious to gain greater knowledge in the field of genetics.

DR. R. RAVINATHAN,

"The Older Patient—A Textbook of Geriatrics"—(Third Edition) By Dr. R.E. IRVINE, M.A., M.D., F.R.C.P., Dr. M.K. BAGNALI, A.I.E.S.W., and Dr. B. J. SMITH, S.R.N., R.P.N., Pp. 240; Published by: M/s. B. I. Publications Promotion Department, 359, Dr. D. N. Road, Bombay-400 023.

[Price : $ 2·95 or Rs. 49·85.

Thanks to advances in modern medicine, the health standards of the people have been improved. Formerly many people died from infectious diseases, many of which can now be prevented or cured. This however has presented to us the problems of "Geriatrics"—a newer and ever increasing field of work regarding the older patient, managing acute illness in this group of persons, rehabilitation afterwards and his ultimate return to the community. In dealing with the problem of geriatrics, special skills are required and the result is wholly dependent upon teamwork.

The book under review has been divided into 2 sections. The first section gives details of the immediate care of the ill and older patient, like transport of the patient, feeding him, (etc) and how to provide him with the tender and loving care required to fulfil his emotional needs. The list of essential records that should be maintained by the nurses have been provided. In addition the figures and explanatory notes on the various aids available for the older patients to help themselves in their day to day life have also been given. The second section gives details of the various illnesses of old age and their management. Though certain conditions like stroke, arthritis, mental illnesses and malignancy have been emphasised, all problems of old age have been detailed under such headings as:—Disorders of circulation, disorders of nervous system, joints, of blood and organic mental illness.

This book should be extremely helpful to physicians and nurses in managing the problems of the older patients.

U.V.R.

"Cimetidine—The Westminster Hospital Symposium-1978"—By CHRISTOPHER WASTELL, M.S., F.R.C.S., and PETER LANCE, M.A., M.B., M.R.C.P., Pp. 322; Published by : M/s. B.I. Publications, Promotion Department, 359, Dr. D.N. Road, Bombay.400023.

[Price : £ 12·00 or Rs. 211.20

This publication captioned "Cimetidine" is a collection of papers that were delivered at a Symposium held in West Minster Medical School on May 4th and 5th, 1978. The papers have been edited by a combination of a Surgeon and Physician, *viz.*, Christopher Wastell, M.S., F.R.C.S, and Peter Lance, M.A., M.B., M.R.C.P., Hence the book has highlighted factors of interest both from the surgical as well as medical point of view. The discussion that follow the gist of each paper contain very valuable information and makes it an interesting reading. It is high time that varied information regarding Cimetidine is collected and presented in a form like this work for reference. The Editors have succeeded in presenting the inferences drawn by so many workers in the field that, this book would be a very useful reference to post-graduates and gastro-enterologists. Though Cimetidine is still considered a wonder drug by many, the facts about its limitations found in this book are very informative. The role of surgery with Cimetidine or after the therapeutic course is well brought out in the discussions. While there is no doubt that this collection of papers would be a very useful addition to the reference library of various Institutions, the cost of the book is a big deterrent to individual ownership.

Dr. C. S. RAMACHANDRAN, M.S.

"Poliomyelitis—A Guide for develo countries"–By R.L. HUCKSTEP, O. M.A., M.D., F.R.C.S., (Edin.), F.R.C (Eng.), F.R.A.C.S. Pp. 280 : Publi by : M/s. B. I. Publications, P motions Department, 359, Dr. D Road, Bombay-400023.

Price : £ 1

Poliomyelitis is an infectious dise epidemic and endemic, throughout world, usually affecting children und five years of age. It is a common pr blem in the developing countries. T low priced edition is an useful one it has been written with an acc towards rehabilitation of the crippl children.

The book starts with a discussion the merits and demerits of the 2 av able vaccines. Next there is a descr tion of the various methods of phy therapy and the appliances used in s units for the successful rehabilitat of the patients. There are use sections on the role of special p clinics to prevent and to rehabilit patients recovering from this dread disease.

This book should be really useful orthopedic surgeons, nurses and phy therapists.

Dr. AMUDAMO

CORRESPONDENCE

To the Editor, ANTISEPTIC, Madras

Sir,

[*Re* :—Editorial in August 1979 issue]

The reasons you have given in your editorial of Vol. 76, No. 8, for retaining English as the medium of instructions in the field of medical education, to be frank, are flimsy. While leaving aside chauvinistic and parochial sentiments, one should be aware of the objective reality of the capacity of any language to expand and grow in breadth width and depth. I fully agree with the statement that medical education is a highly specialised one; but it does not mean that it is beyond the reach, for ever, of the Indian regional languages. Our experts acquired knowledge through English, at the same time th inherited the slavery of the mind a They are bound to vouchsafe t interests of the common man in t country, not the views of a few ped tic quibblers !

Asst. Surgeon,
Mental Hospital,
Calicut-673016

N. M. MOHAMM
ALI, M.B.,B.S.,
D.T.M.

Question

Sir,

[*Sub* :—Chemoprophylaxis for Lep Contacts]

At the recently held Bienn Conference of Indian Association Leprologists at Madras on April 6 of this year, Dr. S K. Noordeen of C tral Leprosy Institute, Chiglepu t, advocated the use of "Acedapsone" chemoprophylaxis of leprosy contacts. Will you please let me know through your "Correspondence Column" about the availability of the drug in India its manufactures/distributors with its patent name if any and about the mode and route of therapy etc. I hope you will help us in this matter through your Leprosy consultants or through Dr. Noordeen himself. As the subject is a burning problem for us the practitioners of medicine as well as the society, so this query through your journal.

X-ray Clinic and Consultation, Nursing Home Shahada, Dhulia Dist. (Maharashtra) 4-7-1979 } **M. G. TATIYA,** M.B., B.S.,

Answer

"Acedapsone or DADDS (Diacetyl Diamino Diphenyl Sulphone), a long acting repository antileprosy preparation has been found to be moderately effective as a chemoprophylactic among child contacts of lepromatous leprosy, as found in a study in Madras City. The drug was administered in a dose of 225 mgm. for children 6 to 15 years of age and 150 mg. for children 1 to 5 years intramuscularly once every 11 weeks. The drug is not available in India. It is marketed by Parke Devis Co., in the brand name of 'Hansolar' in Brazil, and in some other countries."

Deputy Director (Epid.) 9-8-1979 } **S. K. NOORDEEN,** M.B., B.S., D.Ph., M.Ph.,

Sir,

Sub:—Correspondence of Dr. K. C. Pillai on Rabies publishd in "The Antiseptic" August 1979 issued—remarks offered.

With reference to letter of Dr. K. C. Pillai cited above I wish to reply to him through your Journal.

With regard to Human Diploid Cell Vaccine—there are two types and cell mediate vaccine *viz.*, (*i*) Hamster cell culture vaccine and (*ii*) human diploid cell vaccine are available in Western countries. It has got number of advantages over our nervous tissue vaccine inactivated with beta propiolactone. *viz.*, (*i*) only two injections of 2 ml. each. (*ii*) antibody production lasts longer and (*iii*) less of neuroparalytic accidents—practically nil. But our country is not in a position to prepare it in the near future and from reliable sources I understand it will take nearly about five years to manufacture in India due to some International convention regards the preparation of vaccine. Even to import the same there are so many formalities which are very difficult to overcome. Under these circumstances I am to state that I am trying to get it by some sources. And also I am finding out a drug—an indigenous one—to cure hydrophobia which is under trial in animals.

1675, Anna Nagar, Madras-600040 } **Dr. C. NATARAJAN.**

Question

Sub: Substitution therapy is a case of Addison's disease of Tuberculous Origin.

Sir,

Davidson's text book of medicine advises treatment with Fludrocortisone 0·1 mg. tab. 1 T.D.S. which has got mineralocorticoid effect. So kindly let us know from where and how it can be got?

88, Madurai Road, Theni } **A. DAMODGRAN,** M.B.,B.S., F.C.G.P.,

Answer

Fludrocortisone is more potent sodium retaining steroid but at present it is not available, in India.

Addison's diseases is a disorder due to chronic adrenal insufficiency usually tuberculous in origin. Therapeutic objective is to institute replacement therapy. The drug of choice is a sodium retaining steroid. Hence cortisone acetate (Corlin Tablet) is the most suitable one, in the dosage of 2½–5 tablets (5mg. each) orally daily. In addition patients are to be advised to take 10 g. of sodium chloride a day. To keep a control on the electrolyte balance, deoxycortone acetate (DOCA) should be given in the dosage of 1–2 mg. a day intramuscularly initially, followed by buccal administration of 1 tablet (1 mg.) twice daily. With proper dosage the blood pressure should return to normal level by 2 months, appetite should improve and the fasting blood sugar level and the serum electrolytes will show normal values. Appearance of peripheral oedema, hypertension and serum potassium deficiency indicate over dosage. Periodic (short-term) discontinuation of therapy may be necessary to prevent over dosage.

Once a stabilization dose has been arrived at, desoxycorticosterone trimethylacetate, 25-75 mg. I. M. once monthly, may be used instead.

R. RAVINATHAN, M.B., B.S,

Query

I shall be highly thankful if you could please enlighten me on any year-long acting injectable contraceptive, in detail.

Janta Clinic,
Gesoopul (SKD) 203205,
Bulandshahr, (U. P.)

P. K. GUPTA,
B.I.M.S.,

Answer

The long acting injectable contraceptives are the preparations containing progesterone in depot form. They are much more acceptable and widely used amongst under privileged communities in some parts of the world. There is no year long-acting contraceptive. Intra-muscular injections of medroxyprogesterone acetate (150 mg.) gesterenol hexanoate (200 mg.) or norethisterone œnanthate (200 mg.) every three months are used. The pregnancy control with these preparations is good but they produce irregular bleeding and complete loss of cycle; continued desp te their complications, they also produce amenorrhea. The best indication for progesterone depot is to protect a woman during the 3 months following confinement when irregular bleeding is of little account, and then she can be switched on to another contraceptive method. Once a month injections of combined hormones are also available.

AMUDHAMOZHI, M.B., B.S.

Query

Sir,

I have a book on first aid in a dents. It contains only first aid tre ment of electric shock, but not the treatment at various stages and wha doctor should do when called for.

Anaparthy,
E.G. Dist, (A.P.)

V. SAMBASIVA RAO,
L.I.M.

Answer

The treatment of electric shock is follows —

Emergency measures:—

1. Adequate airway must be ma tained. Artificial respiration mu started immediately if breathing depressed and continued until spo neous breathing returns.

2. Precordial compression sho be performed if there is ventricu fibrillation. Artificial respiration not restore normal heart action. In sion of the chest and manual pump of the heart may be employed as last resort. Electric defibrillators m be employed if available.

3. Shock should be treated promp ly :—(*i*) Place the patient in t "shock position" (recumbent with he lower than the rest of the body) unle he has a head injury, (*ii*) The pati should be kept comfortably warm, (i Adequate blood volume should maintained by parentaral fluid therap

4. Positive pressure oxygen wi CO_2 may be used when available oxygen and CO_2 by mask combin with artificial respiration.

Hospital measures:—

1. The patient when revived sho be hospitalised and observed for sudd cardiac dilatation or secondary hæm rhage.

2. If signs of increased intracrani pressure are noted, lumbar punct should be performed.

3. The local burns should treated conservatively. The direct and extent of tissue injury may not apparent for weeks. Infection usually not a problem earlier. All granulation tissue to be well establis before attempting surgery. Hæmorrha may occur late and may be severe.

R. RAVINATHAN, M.B.,

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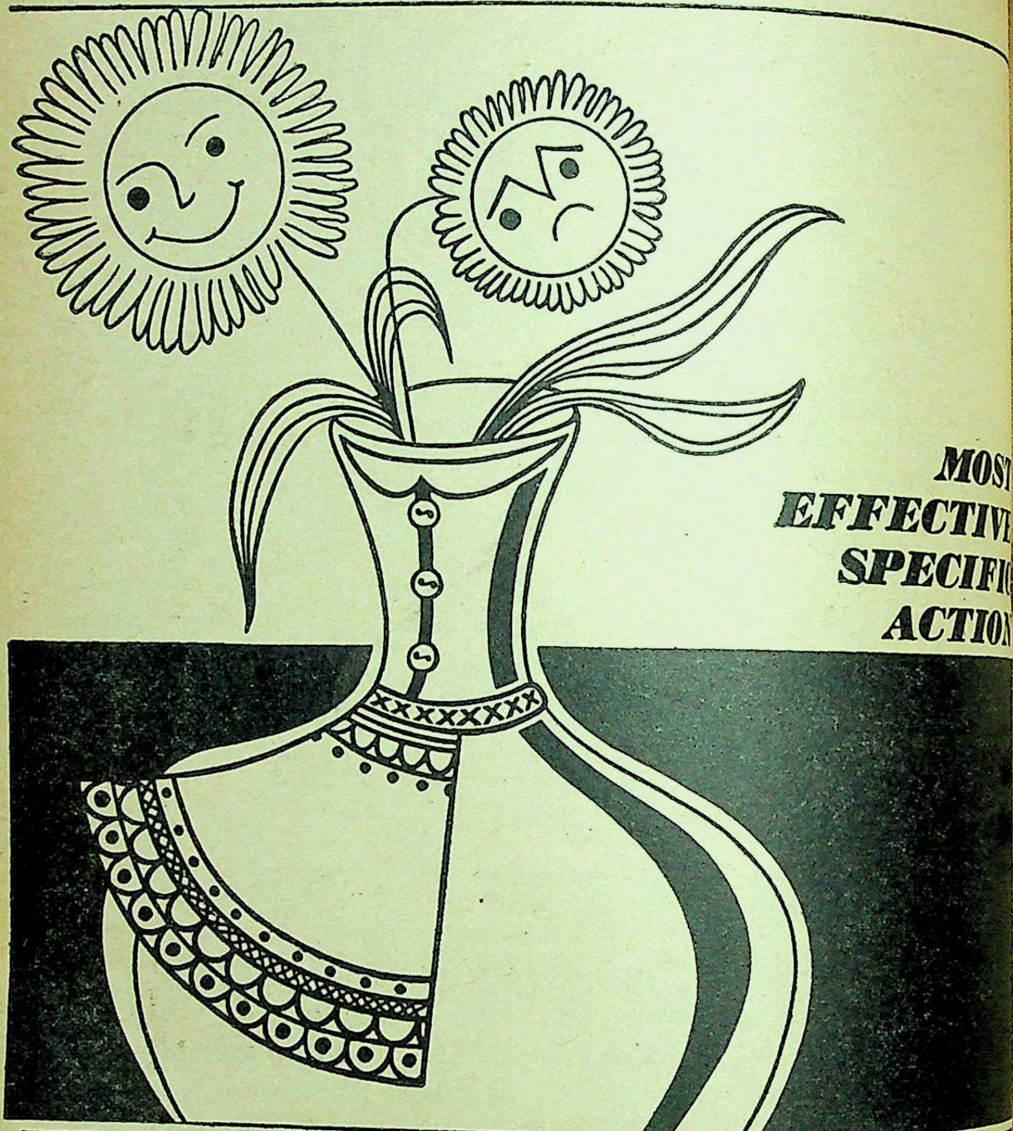
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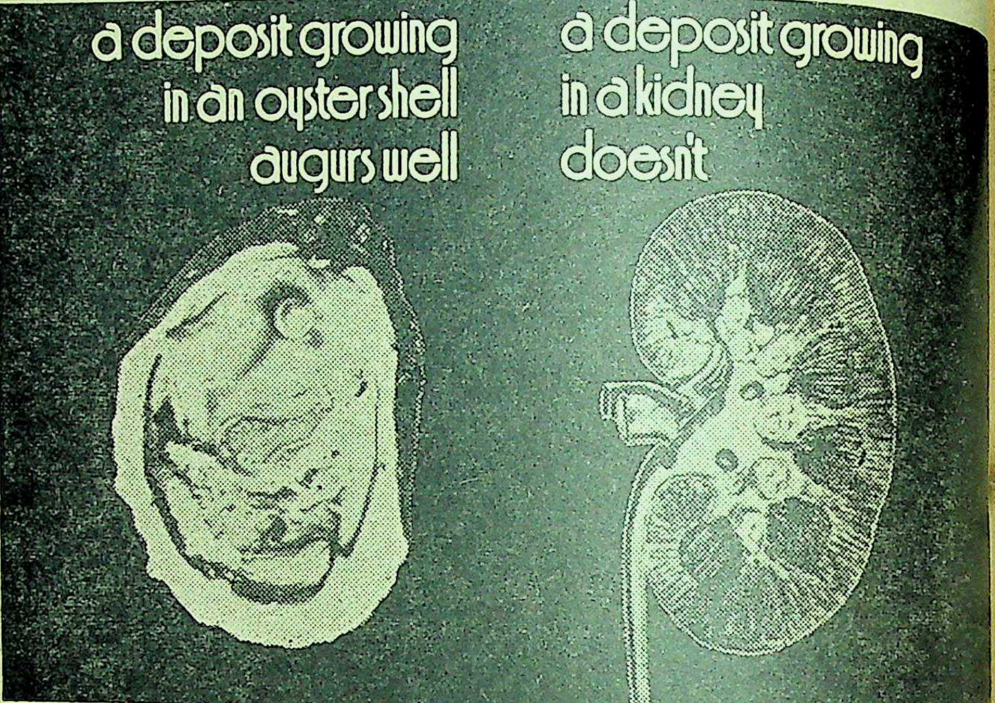

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1 Pak, C.Y.C. and Arnold, L.H. (1975), *Proc. Soc. Exp. Biol.* 149/4,930.

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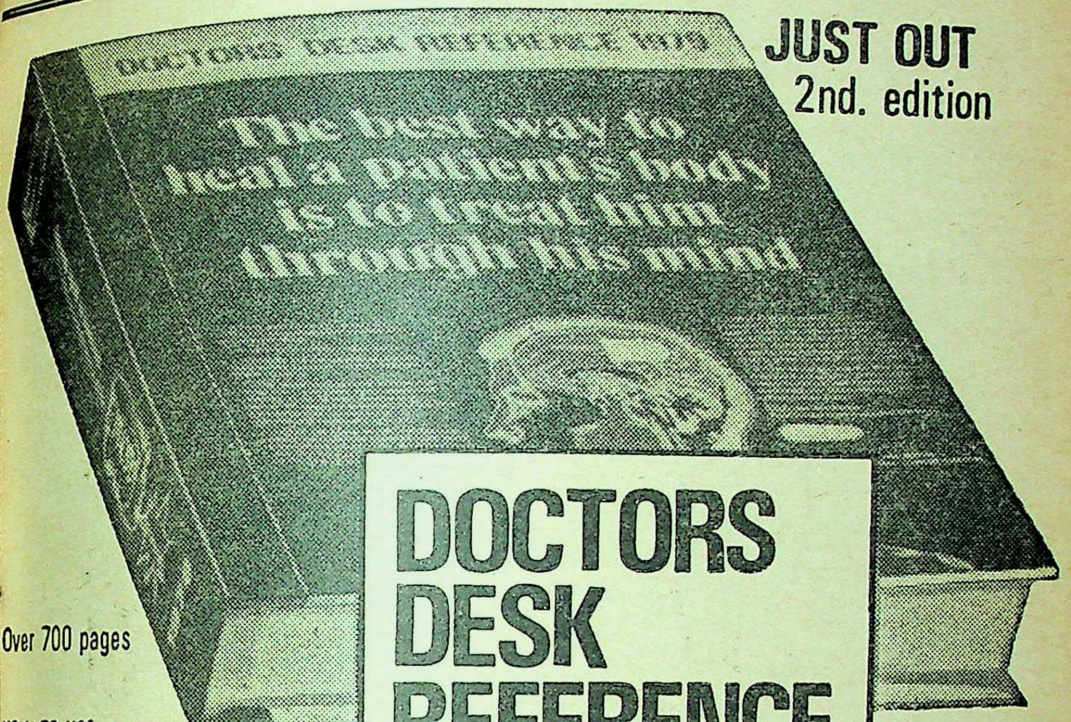
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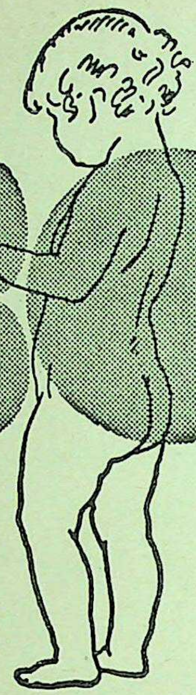

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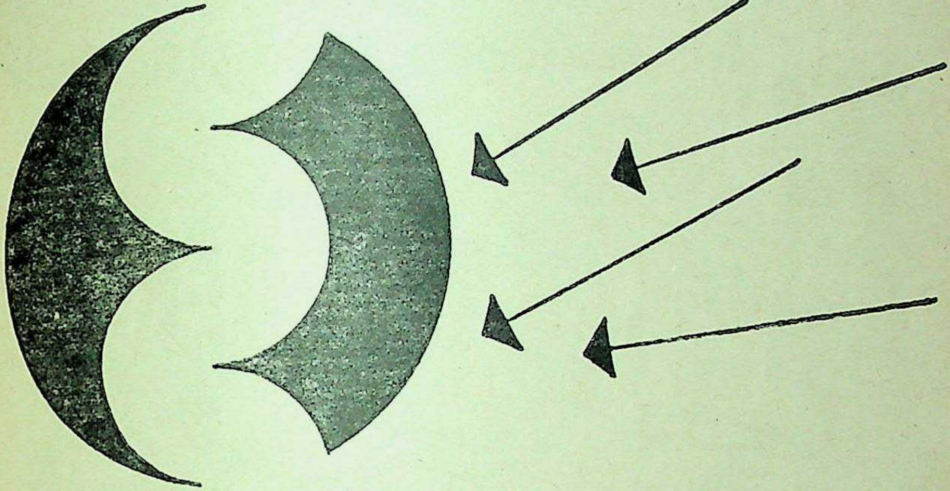

A contact laxative

Constipation presents a frequent and at all times topical therapeutic problem. Mostly it is only a symptom accompanying another illness and can in that way complicate the whole course of the disease. Sometimes constipation occurs as a separate clinical entity.

Dulcolax

through contact with the mucosa of the large intestine initiates reliably the normal defaecatory reflex. The mucous membrane remains unchanged even after prolonged use of high doses and there is no inflammatory reaction.

Box of 100 enteric coated tablets
(in strips of 10 tablets each)
Bottle of 250 enteric coated tablets
Box of 5 suppositories (adults)
Box of 50 suppositories (adults)
Box of 5 suppositories (infants)

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3 BROTHERS

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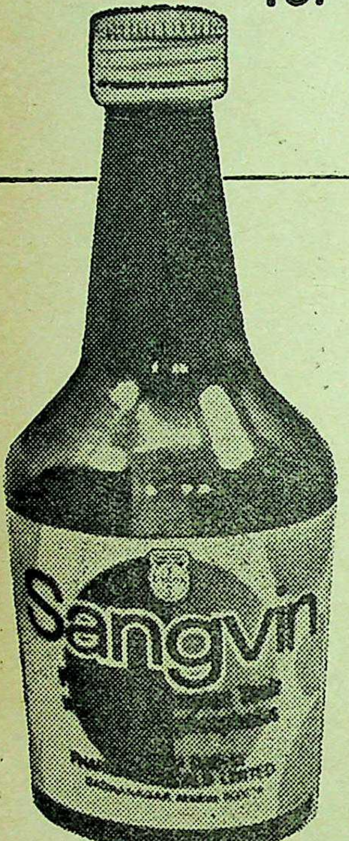
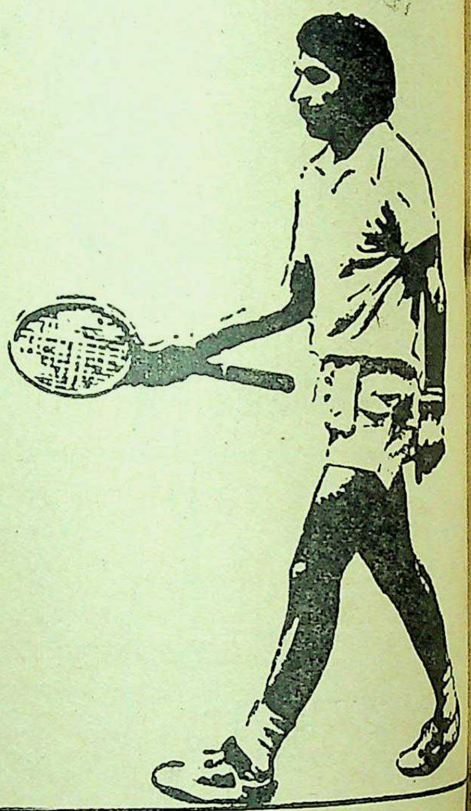
for Restoring Energy & Vitality



Presentation: 200 ml. bottles



A restorative tonic* for all ages throughout the year

*Vitamin B Complex Tonic with Glycerophosphates

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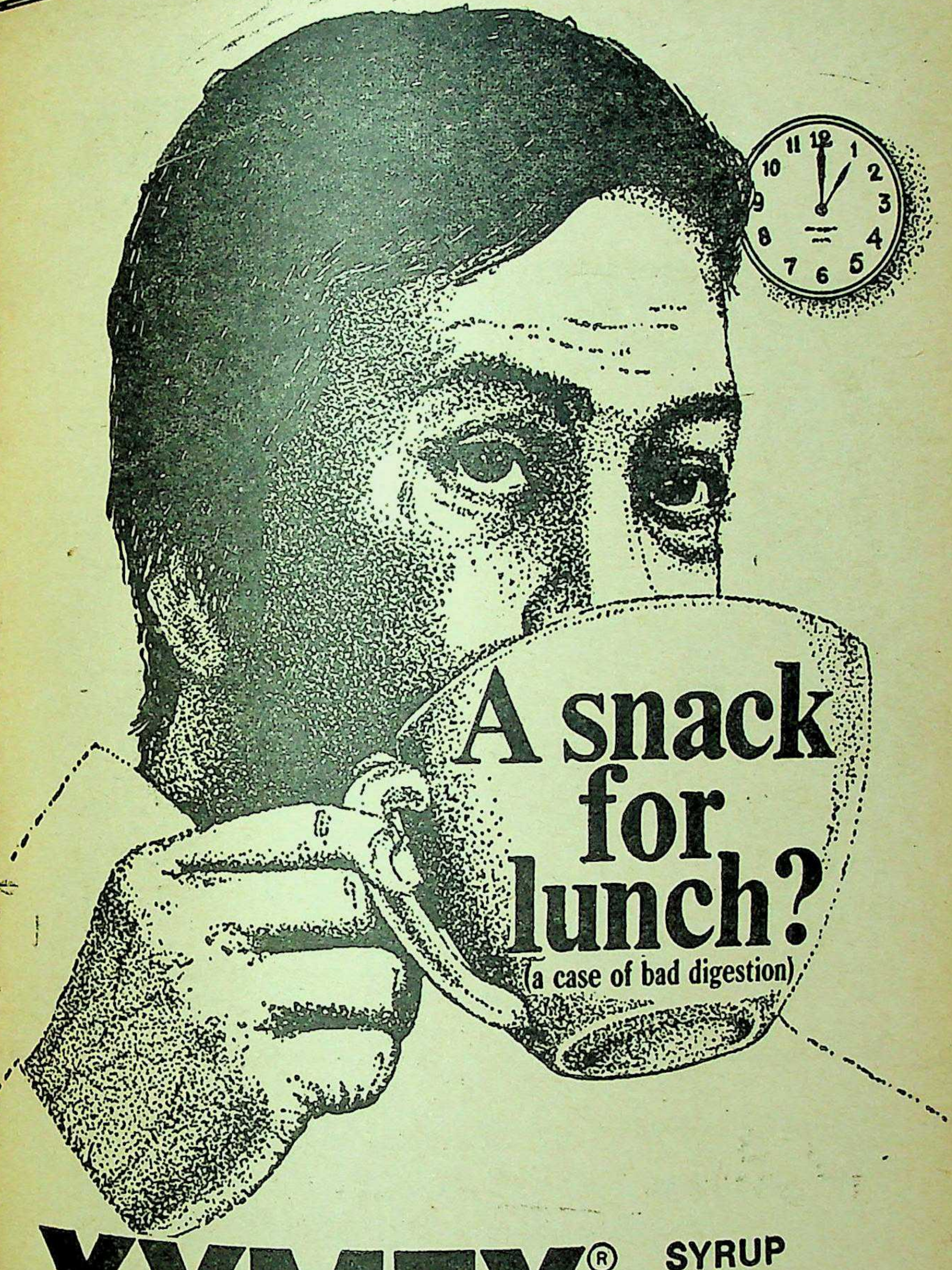
A snack for lunch?
(a case of bad digestion)

XYMEX®

Checks digestive problems in time

SYRUP

FORMULA:
Each 10 ml (approx. 2 teaspoonful) after mixing the contents of diastase Sachet, contains:

Pepsin	I.P.	60 mg.
Diastase (1 : 50)		40 mg.
Vitamin B1 HCL	I.P.	5 mg.
Vitamin B2	I.P.	2 mg.
Vitamin B6	I.P.	1 mg.
D. Panthenol		1 mg.
Niacinamide	I.P.	15 mg.
Flavoured syrupy base		q.s.

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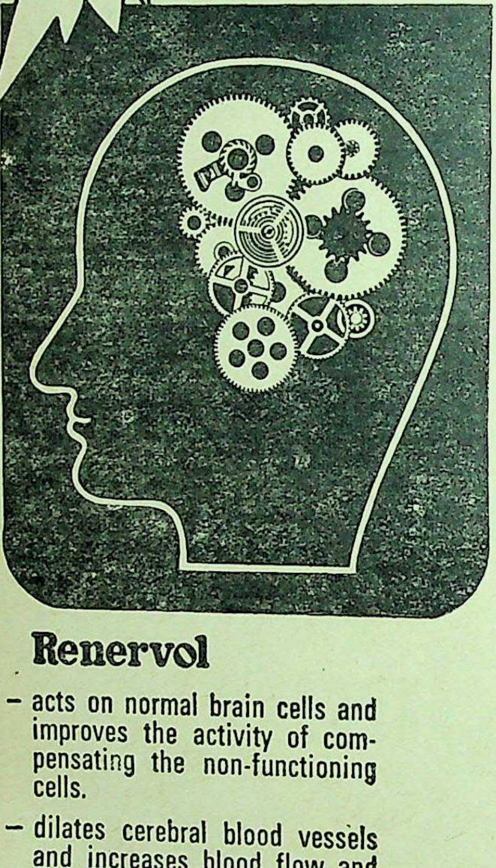
introducing... Renervo
PYRITINOL TABLETS/SUSPENSION



promotes the brain metabolism and circulation

Renervol

- acts on normal brain cells and improves the activity of compensating the non-functioning cells.
- dilates cerebral blood vessels and increases blood flow and oxygen consumption.
- effectively reduces distractability and improves capacity of attention and vigilance.
- being low in toxicity and highly tolerated is a safe agent even for prolonged administration.

PRESENTATION:
Strip of 10 Tablets and Suspension in 60 ml. bottles.

COMPOSITION: TABLETS:
Pyrithioxine (Pyritinol) Dihydrochloride 100 mg

SUSPENSIONS:
Each 5 ml. (one teaspoonful approx.) suspension contains:
Pyrithioxine (Pyritinol) Dihydrochloride 100 mg.

INDICATIONS:
- Mentally retarded children and children with minimal brain dysfunction
- To improve short-term and intermediate memory in students.
- To accelerate the onset of action of antidepressants.
- Maintenance of psychic and mental integration in old age.
- In selected cases of trigeminal neuralgia & migraine.

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Leader, Lancet, 1977, i, 229

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It outlasts any other.
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and non-metallic shades.
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Tough acrylic film resists all weather con
After effects: Krilo sets your car apart fro
Caution: Krilo is habit forming.

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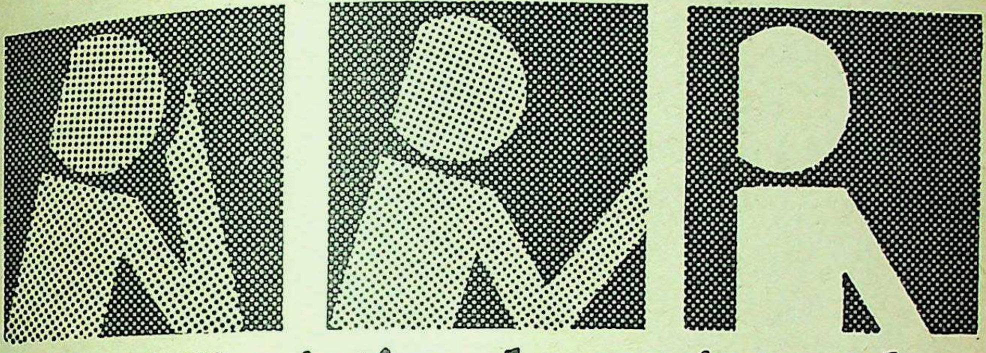

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AMITRIPTYLINE TABLETS
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amitryn® O.D.
AMITRIPTYLINE TABLETS

ONCE DAILY DOSAGE TABLETS

COMPOSITION:

AMITRYN O. D.
Each tablet contains:
Amitriptyline Hydrochloride I.P. 75 mg.

AMITRYN 25
Each tablet contains:
Amitriptyline Hydrochloride I.P. 25 mg.

AMITRYN 10
Each tablet contains:
Amitriptyline Hydrochloride I.P. 10 mg.

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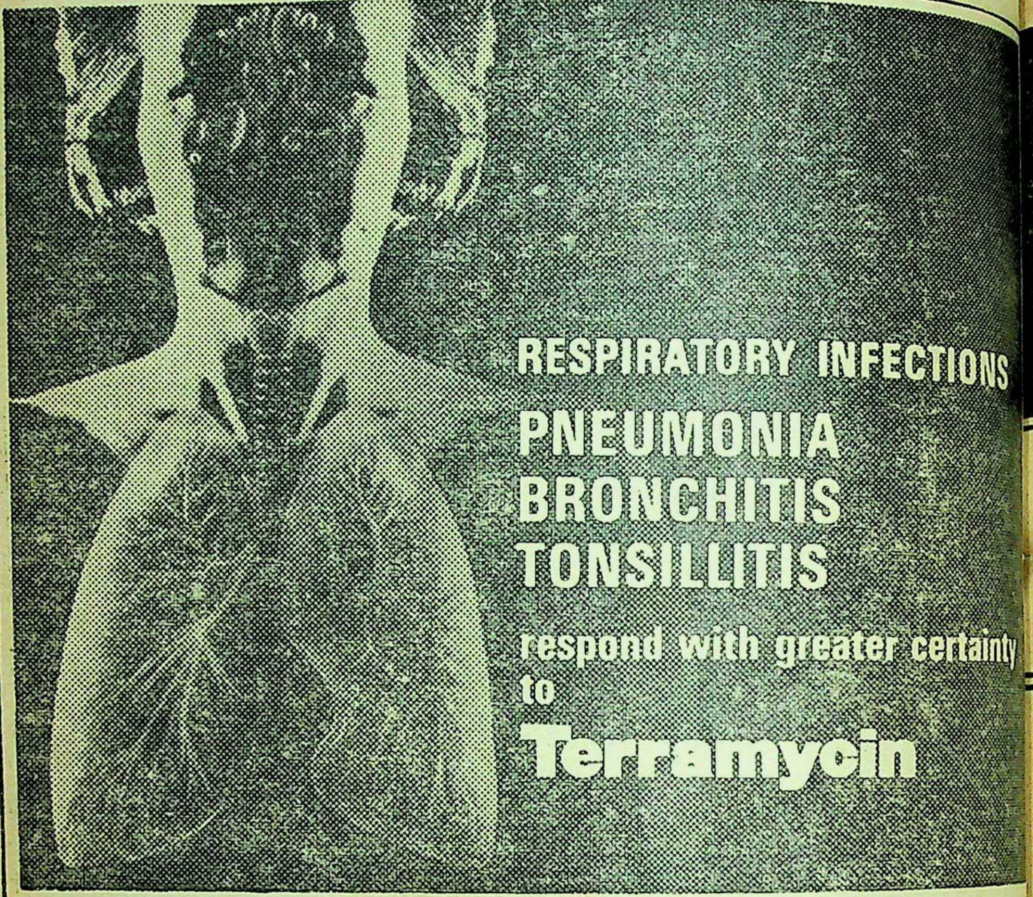
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Paracetamol	250 mg
Diazepam	2.5 mg

for arthritic states

Where energy and resistance is sapped by the complex of pain and sleeplessness

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Oxyphenbutazone	75 mg
Dexamethasone	0.25 mg
Dried Aluminium Hydroxide Gel.	150 mg
Magnesium Trisilicate	100 mg

for painful disorders

of muscles and joints and pain and stiffness following intra-muscular injections

flamar CREAM

Oxyphenbutazone	3% w/w
Methyl Salicylate	5% w/w
Mephenesin	5% w/w
Menthol	2% w/w
Chloropheniramine Maleate	0.2% w/w

for inflammatory disorders in children

where a highly suitable formulation is required in the treatment of infective, traumatic and non-traumatic inflammatory conditions

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Magnesium Trisilicate I.P.	50 mg

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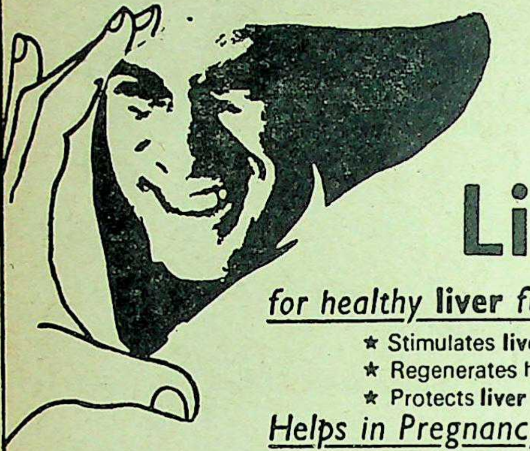

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Livotrit liquid & tablets

for healthy ***liver*** *functions*

- ★ Stimulates **liver** functions
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- ★ Protects **liver** from damage by varied toxic substances

Helps in Pregnancy to overcome morning sickness

- ★ Controls vomitting
- ★ Improves bowel movements
- ★ Stimulates appetite

Helps in jaundice

- ★ Ensures early recovery
- ★ Minimizes convalescence period
- ★ Increases appetite

Helps overcome adverse effects of alcohol

Which cause lowering of serum albumin and enhanced retention of bromsulphathalein.

Livotrit *A new vista in treatment of* ***liver*** *diseases.*

Packagings:
Tablets : in packings of 50, 100 & 40
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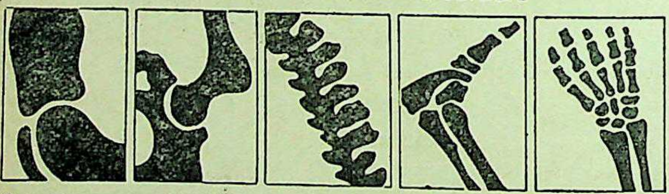
& 200 ml.

RHEUMAYOG offers dramatic relief

For prolonged therapy of Rheumatic disorders



Rheumayog gives satisfactory results by reducing swelling, inflammation and stiffness of joints.

COMPOSITION:
Each tablet contains:
Banga bhasma ---------- 5
Nag bhasma ---------- 5
Loha bhasma ---------- 5
Makshik bhasma ---------- 5
Mandur bhasma ---------- 5
Abhrak bhasma ---------- 5
Rasa sindur ---------- 30
Yog Raj Guggula ----------
Maha rasnadi quath (Solid extract) ---------- 235

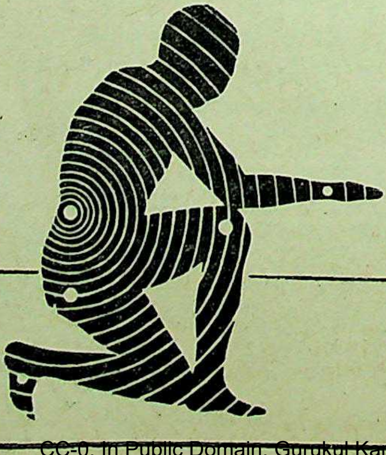
MECHANISM OF ACTION:
The combination of Banga bhasma, Loha bhasma, Makshik bhasma, Mandur and Abhrak bhasma effecti acts as antiinflammatory and diureti

RASA SINDUR:
acts as a diuretic and as a catalys

YOG RAJ GUGGULA:
acts both as an analgesic and diure

DOSAGE:
1 to 2 tablets twice a day with milk

PACKING: 75 Tablets.
Also now available
RHEUMAYOG c̄ Gold Tablets



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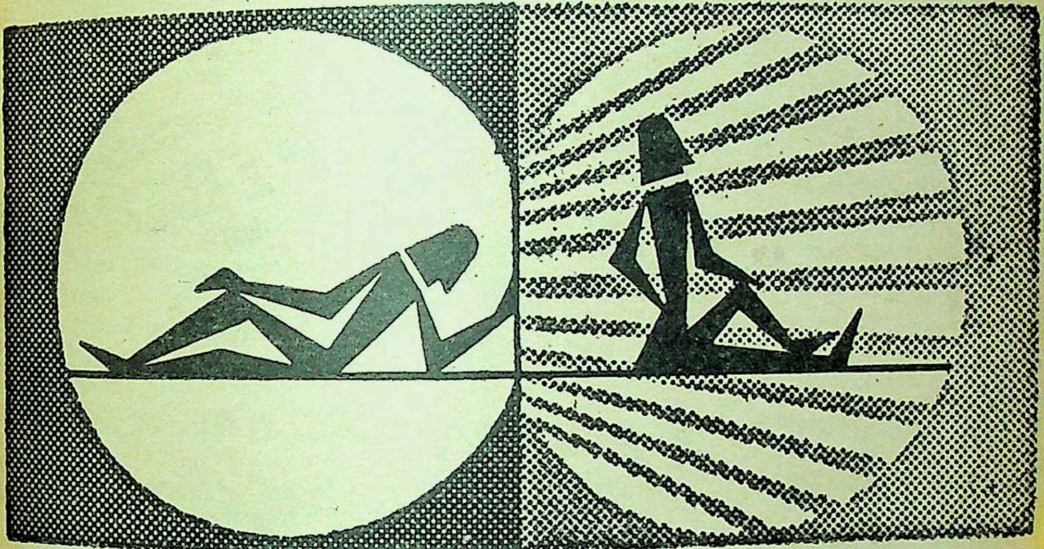

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FOR ALL TYPES OF INFLAMMATORY PAINS

COMPOSITION:

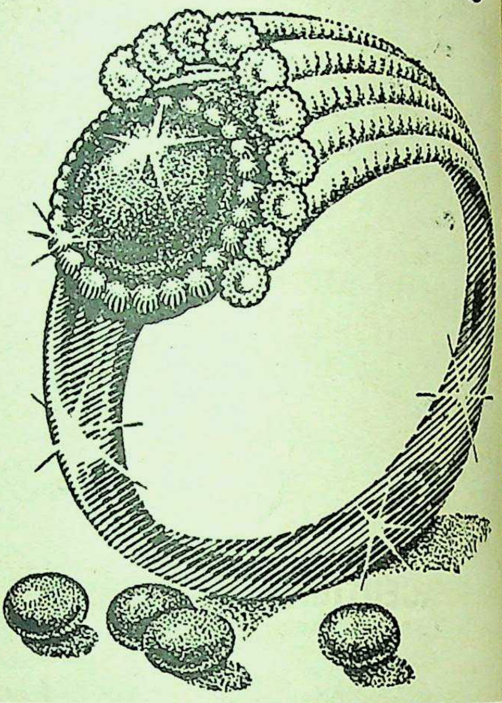
Each pink coloured sugar coated tablet contains:

Oxyphenbutazone	100 mg
Acetaminophen	325 mg
Vitamin B_1	25 mg
Vitamin B_6	15 mg
Vitamin B_{12}	25 mcg
Diazepam	2.5 mg

Colour: Erythrosine

PRESENTATION:

A box of 10x10 tablets strips



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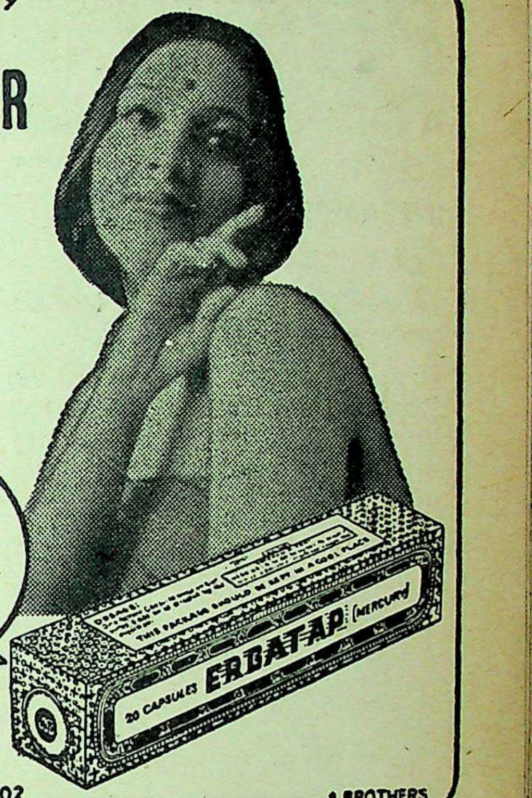

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References:

1) Dr. R.K. Dhongade and Dr. R. Anjaneyulu, "SPORLAC in Neonatal Diarrhoea", Maharashtra Medical Journal, Vol. XXIII, No. 11, page 473 & 474, 1977
2) Dr. S.N. Mathur, et al, Hyderabad.-CLINICAL EVALUATION OF A NEW LACTOBACILLUS, PREPARATION-SPORLAC
3) Prof. Benkappa and Prof. Shivananda, Bangalore. *"Clinical study of SPORLAC in Acute Gastroenteritis"*

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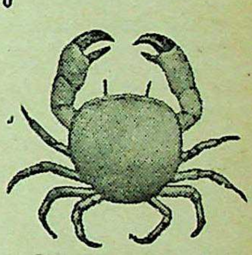

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By PHILIP D. HANSTEN, Pharm. D. Associate Professor of Clinical Pharmacy, College of Pharmacy, Washington State University, Pullman, Washington.

The Clinical Significance of drug–drug interactions and effects of drugs on clinical laboratory tests are prescribed in this work in a clear, concise manner that can be easily utilized in actual practice. This new edition has been expanded to include about two hundred additional drug–drug and drug–food interactions. The addition of some of the more important drug–food interactions represents a new feature of the fourth edition.

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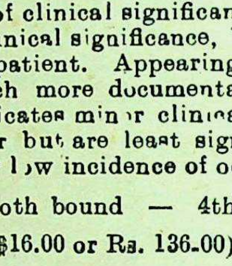

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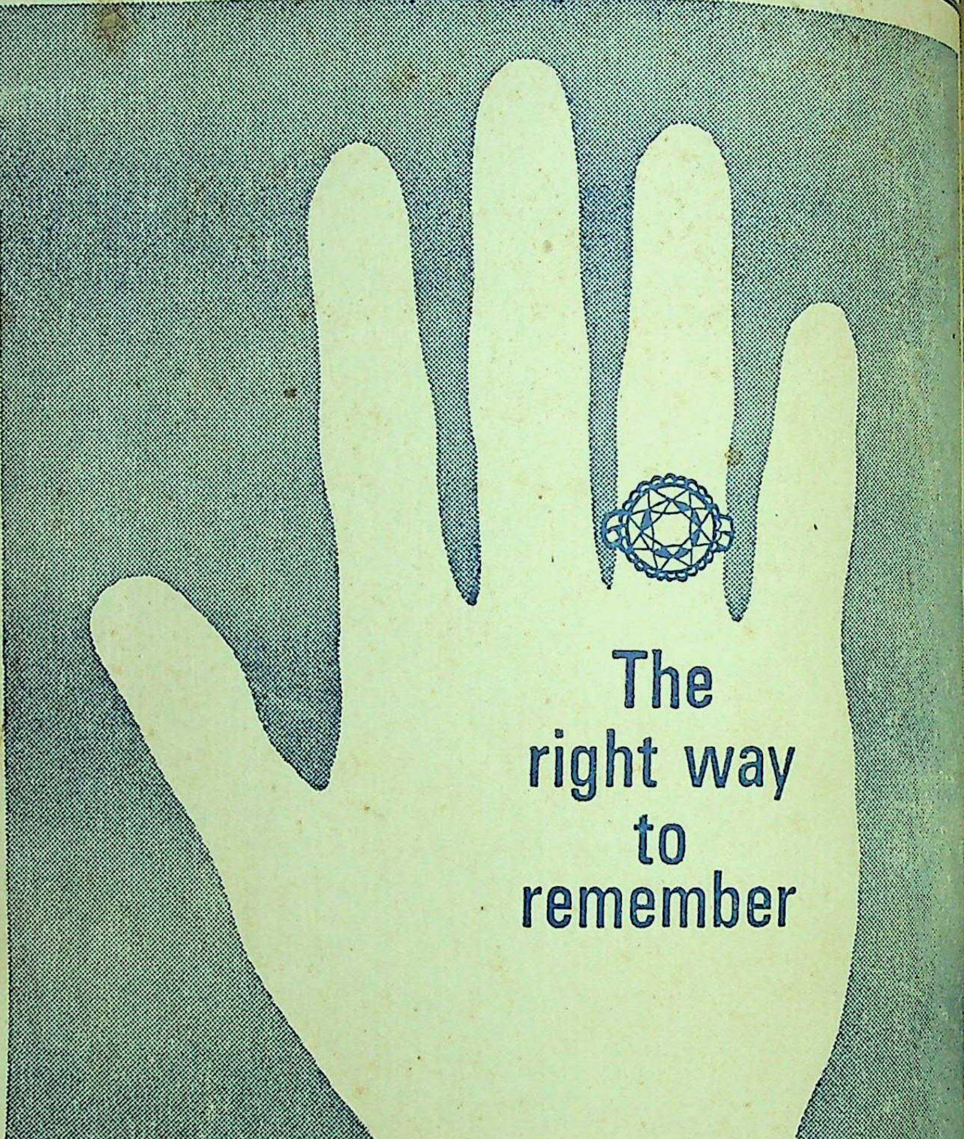

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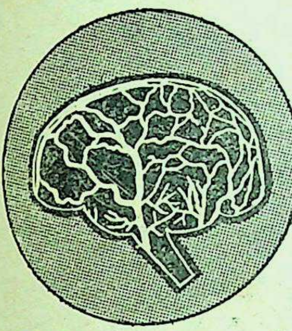

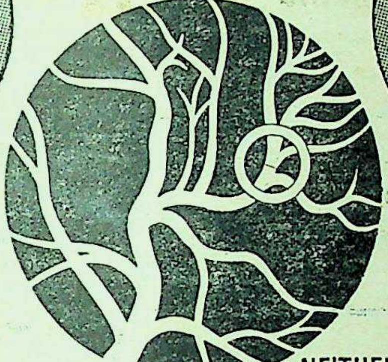

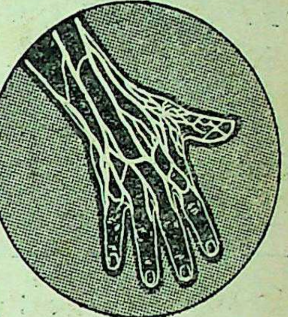

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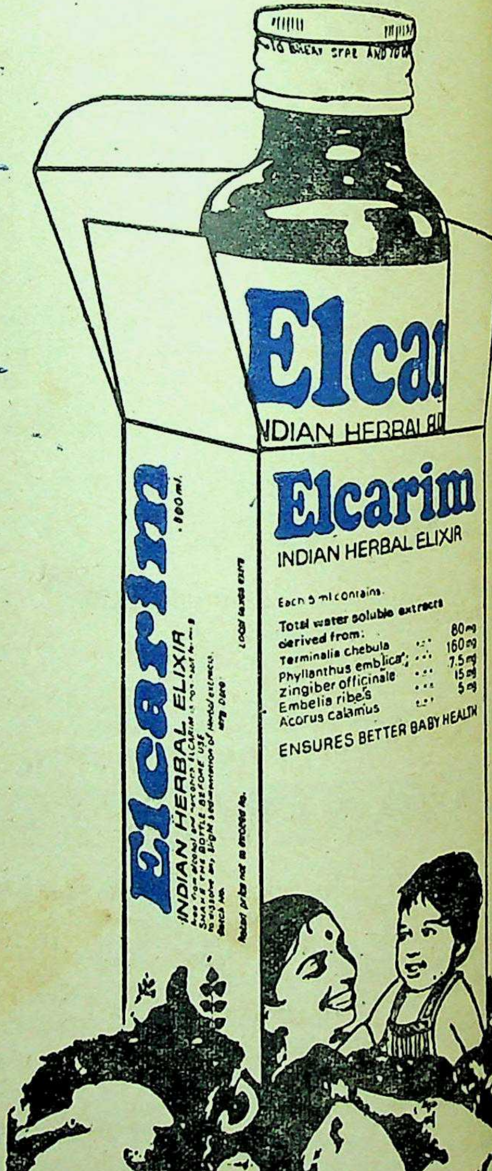
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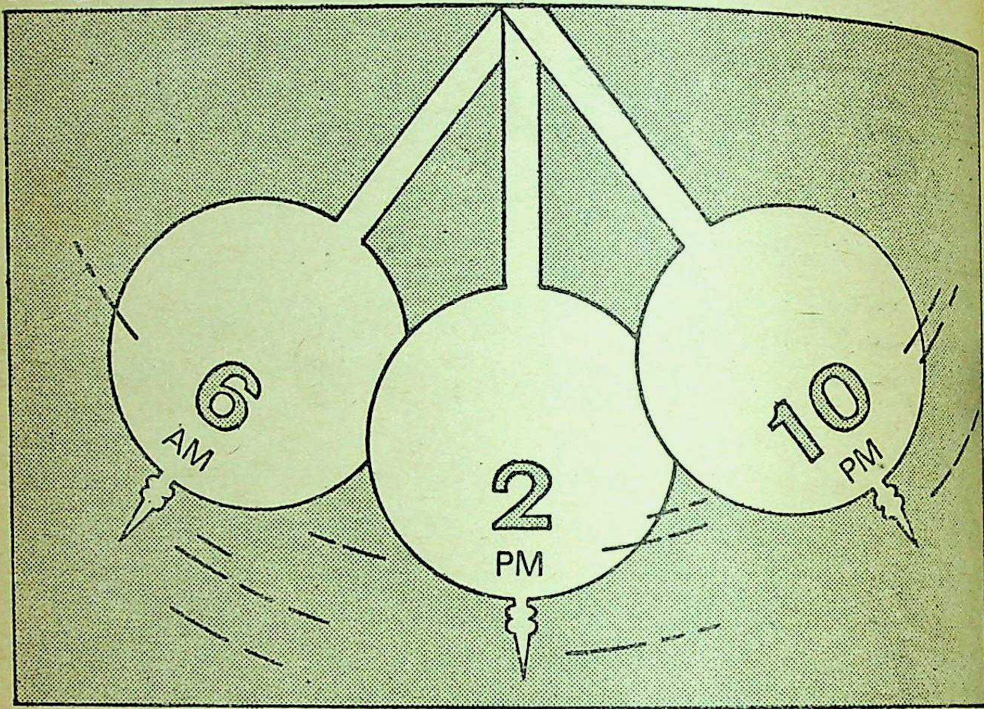

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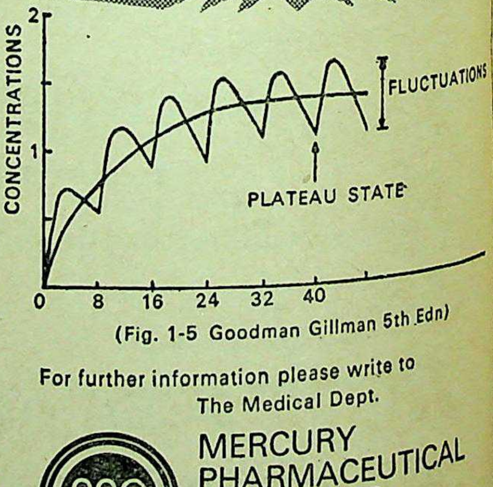

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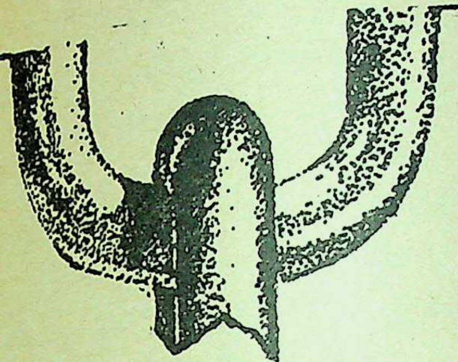

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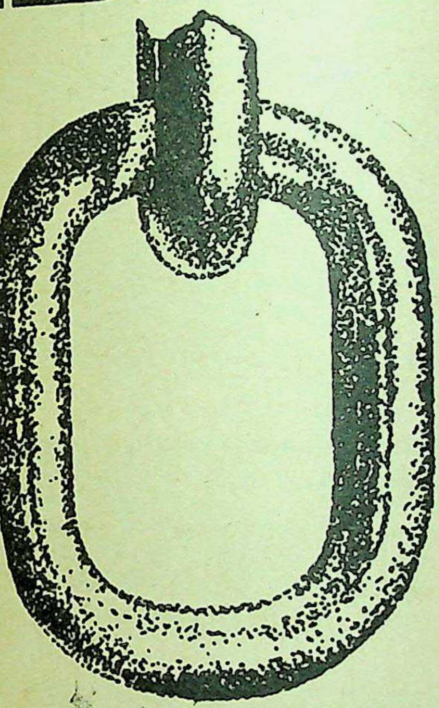

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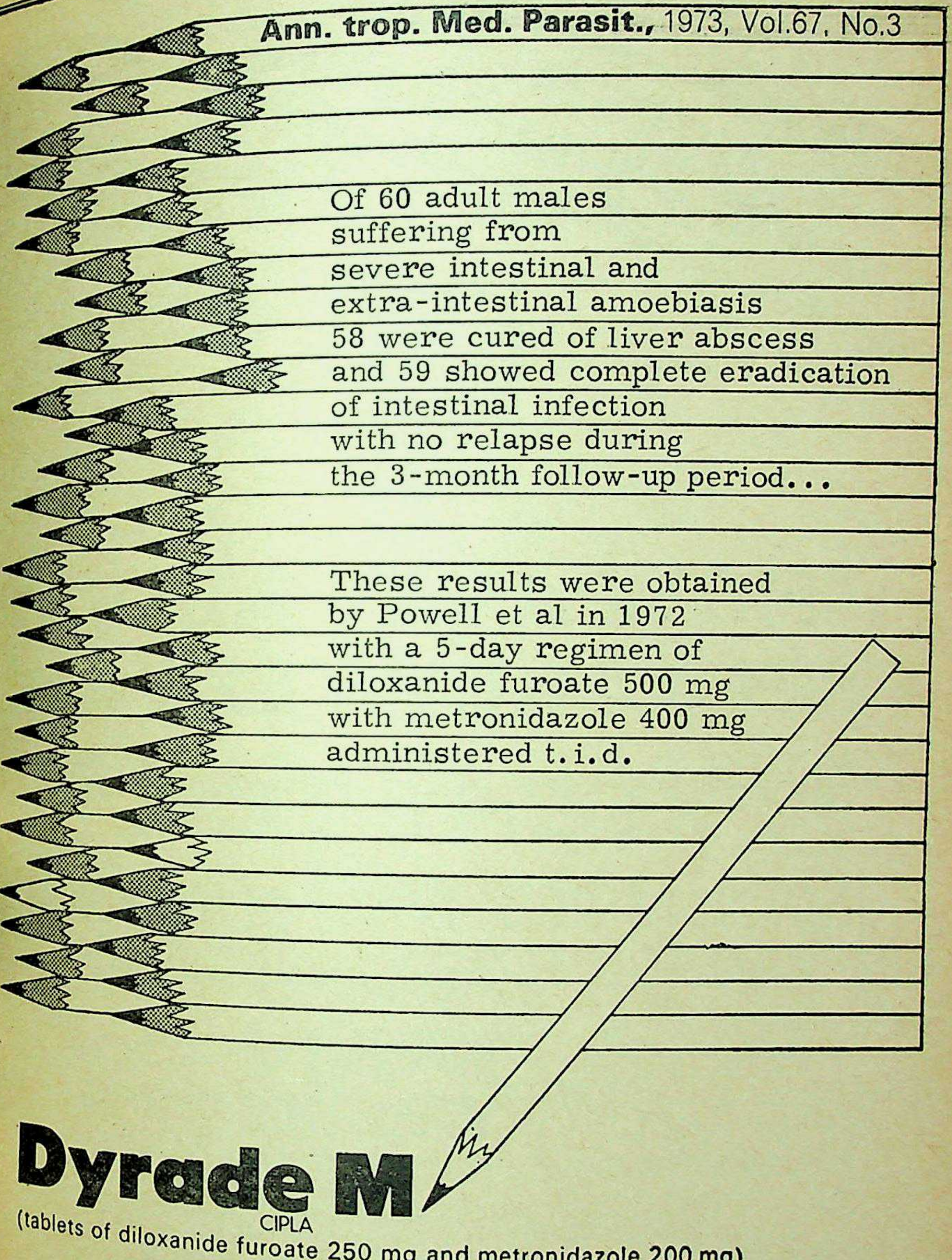

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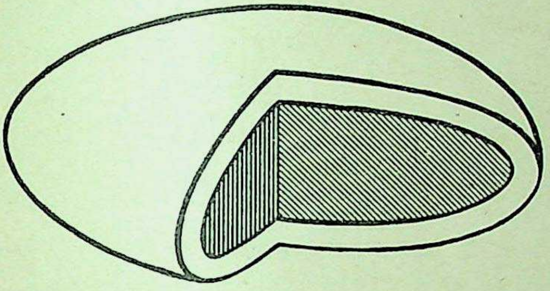

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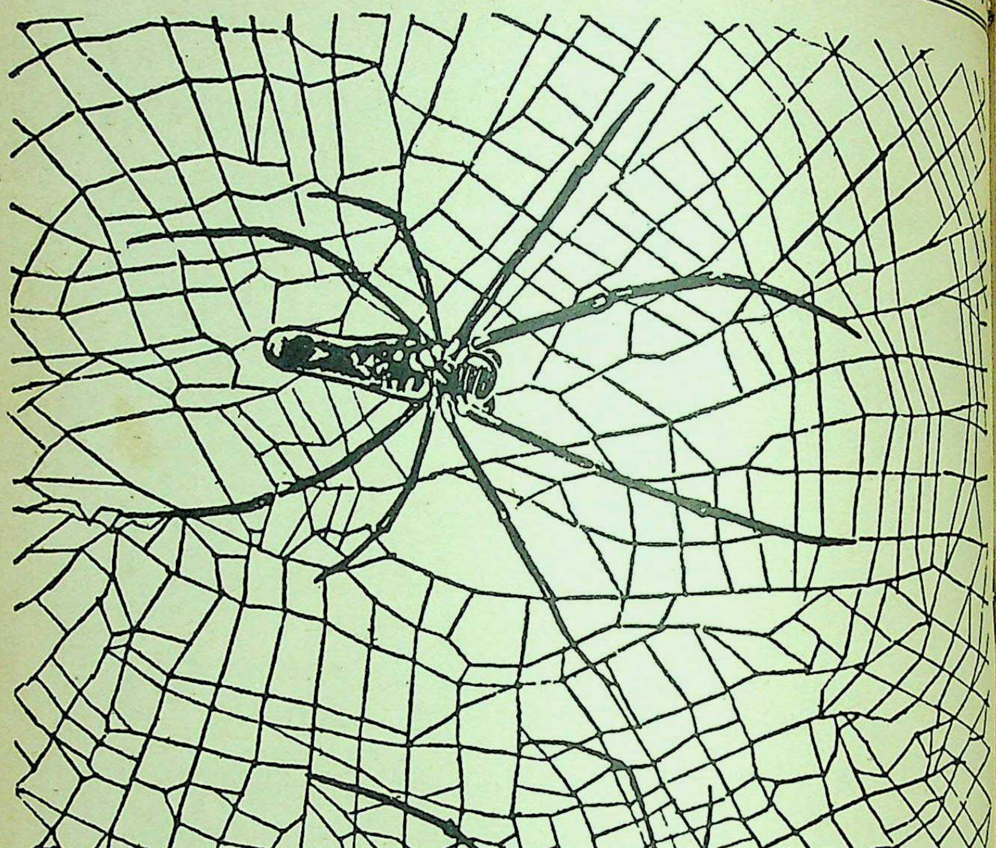
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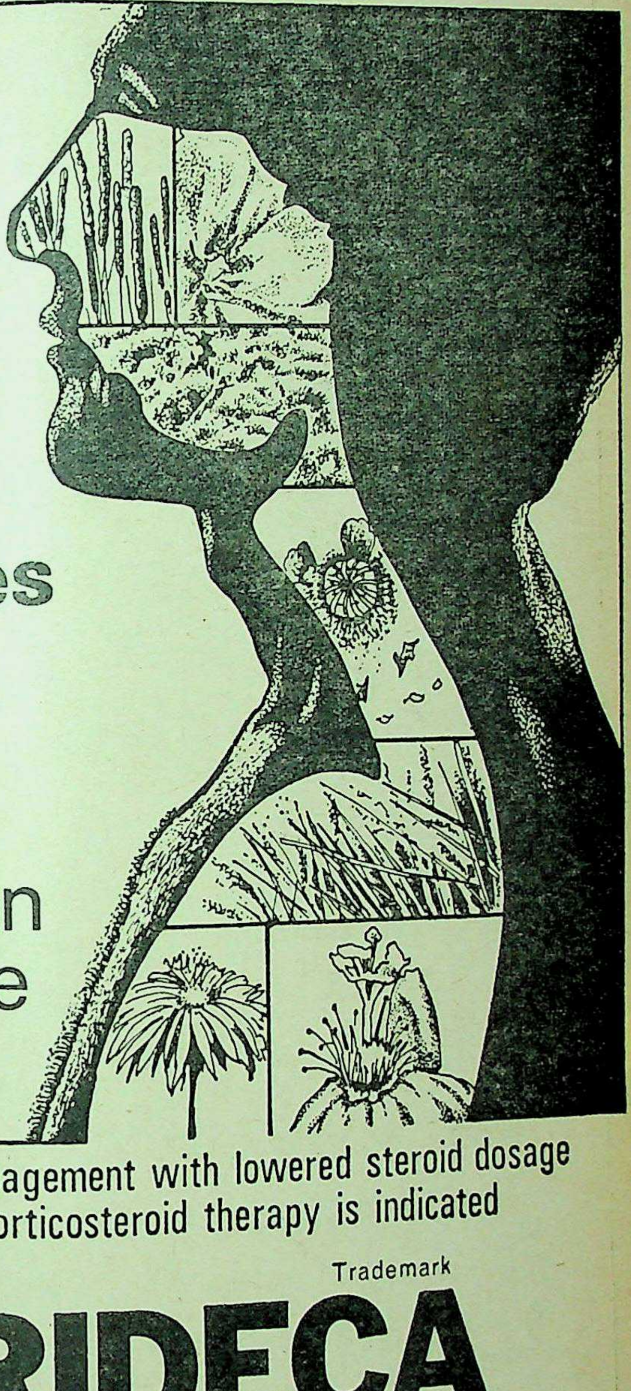

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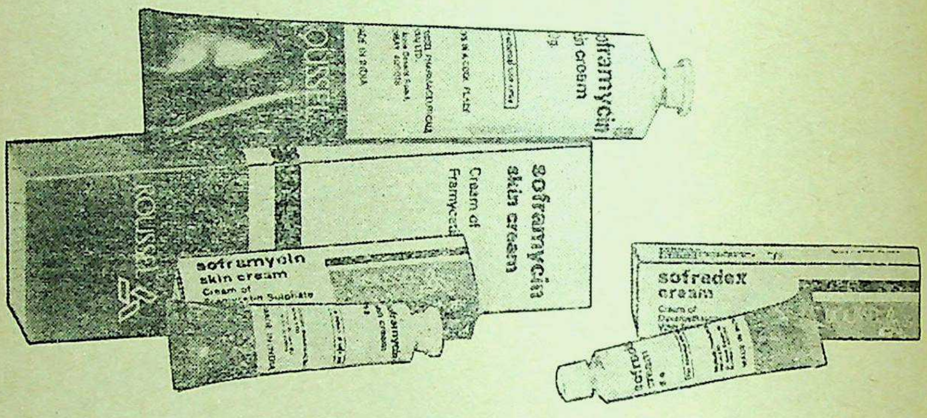
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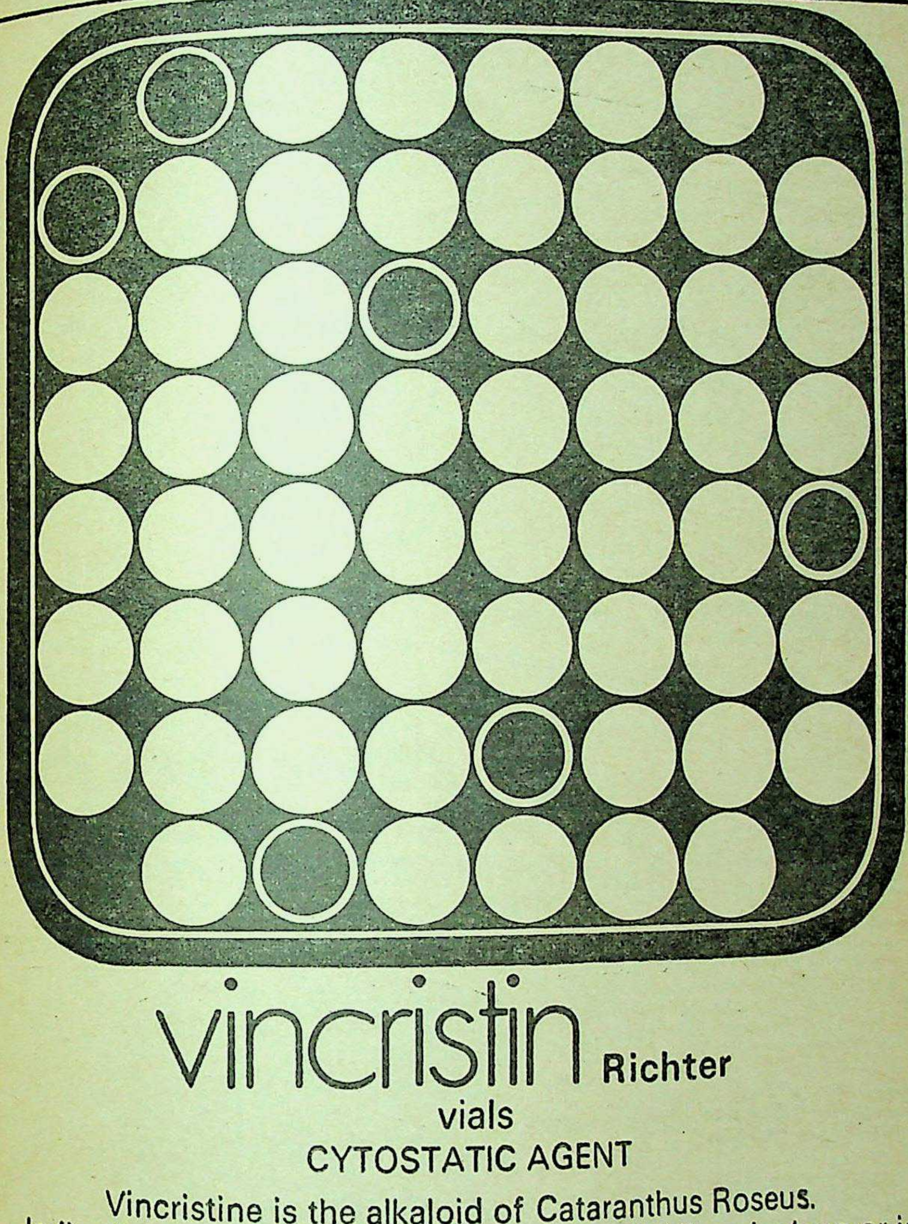

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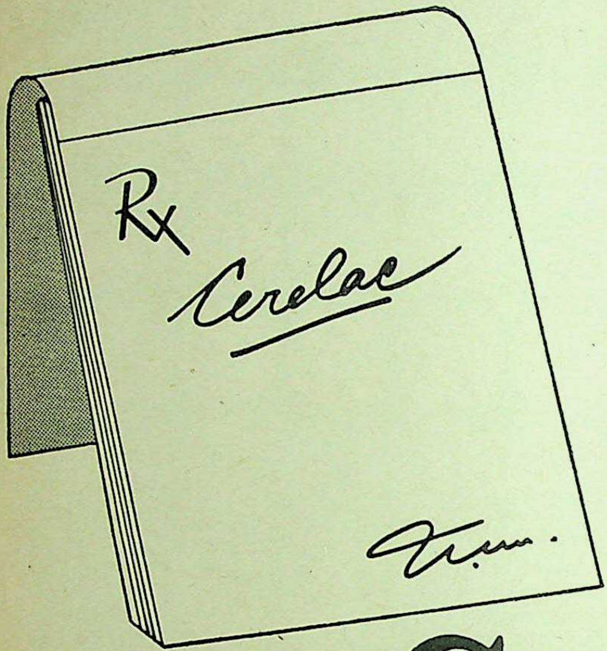

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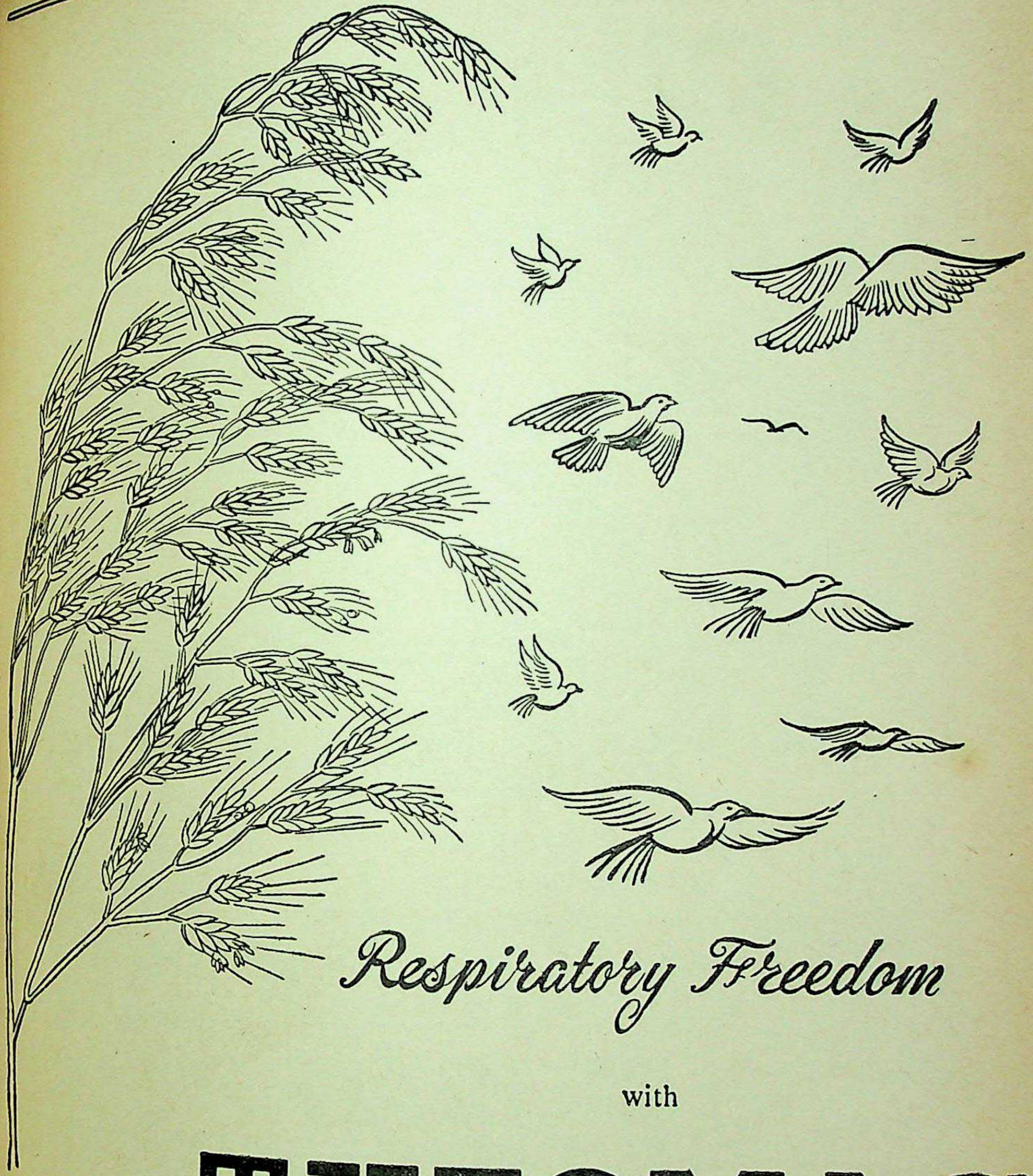

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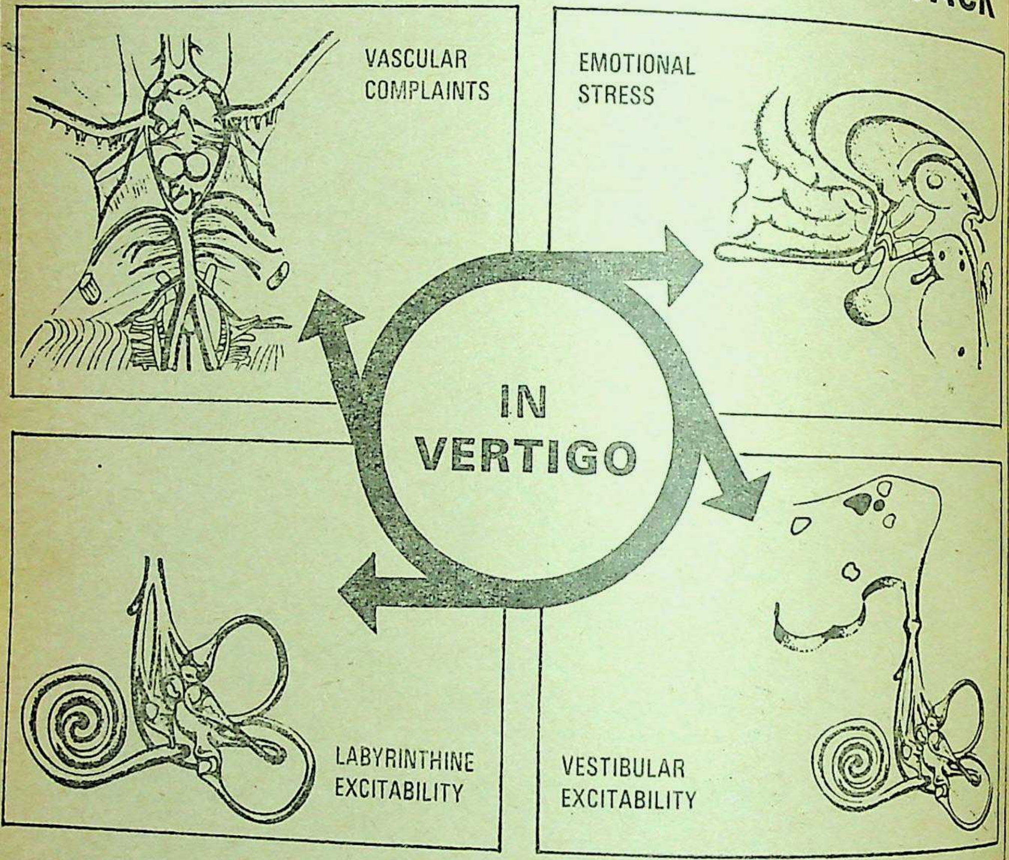
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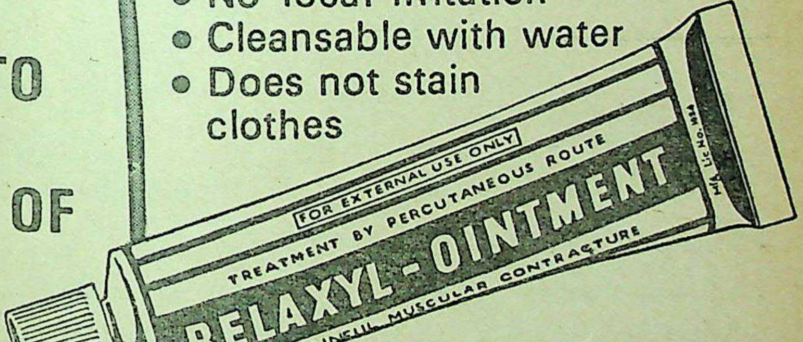
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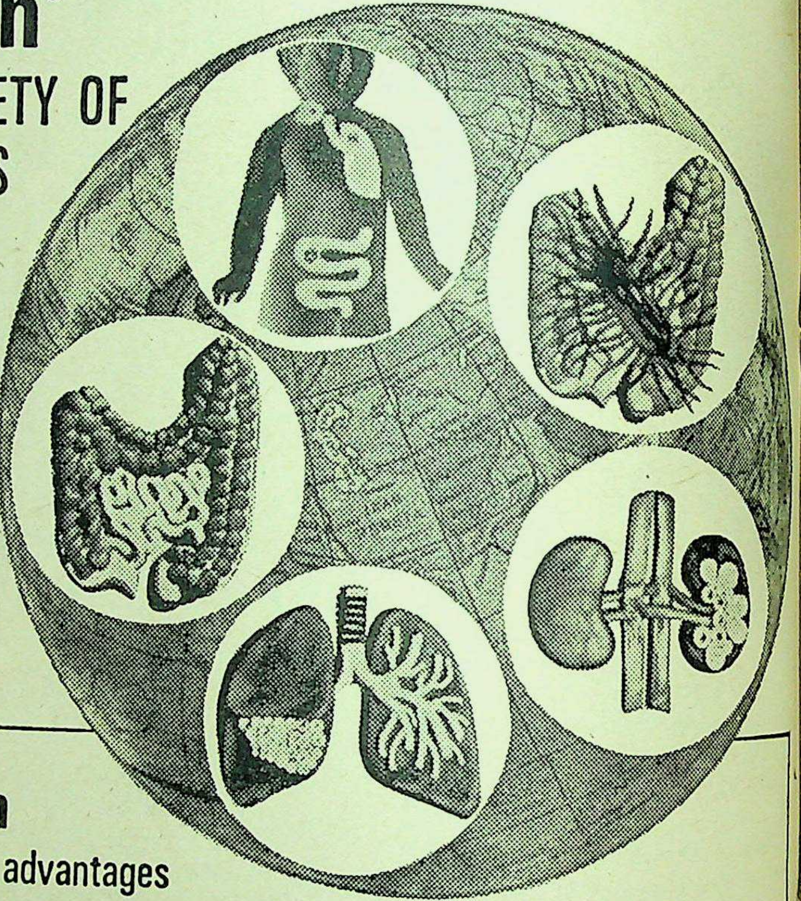

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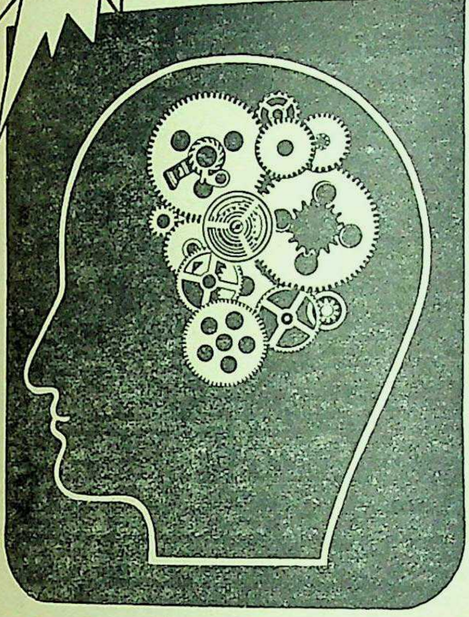

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some diabetics
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others
have a
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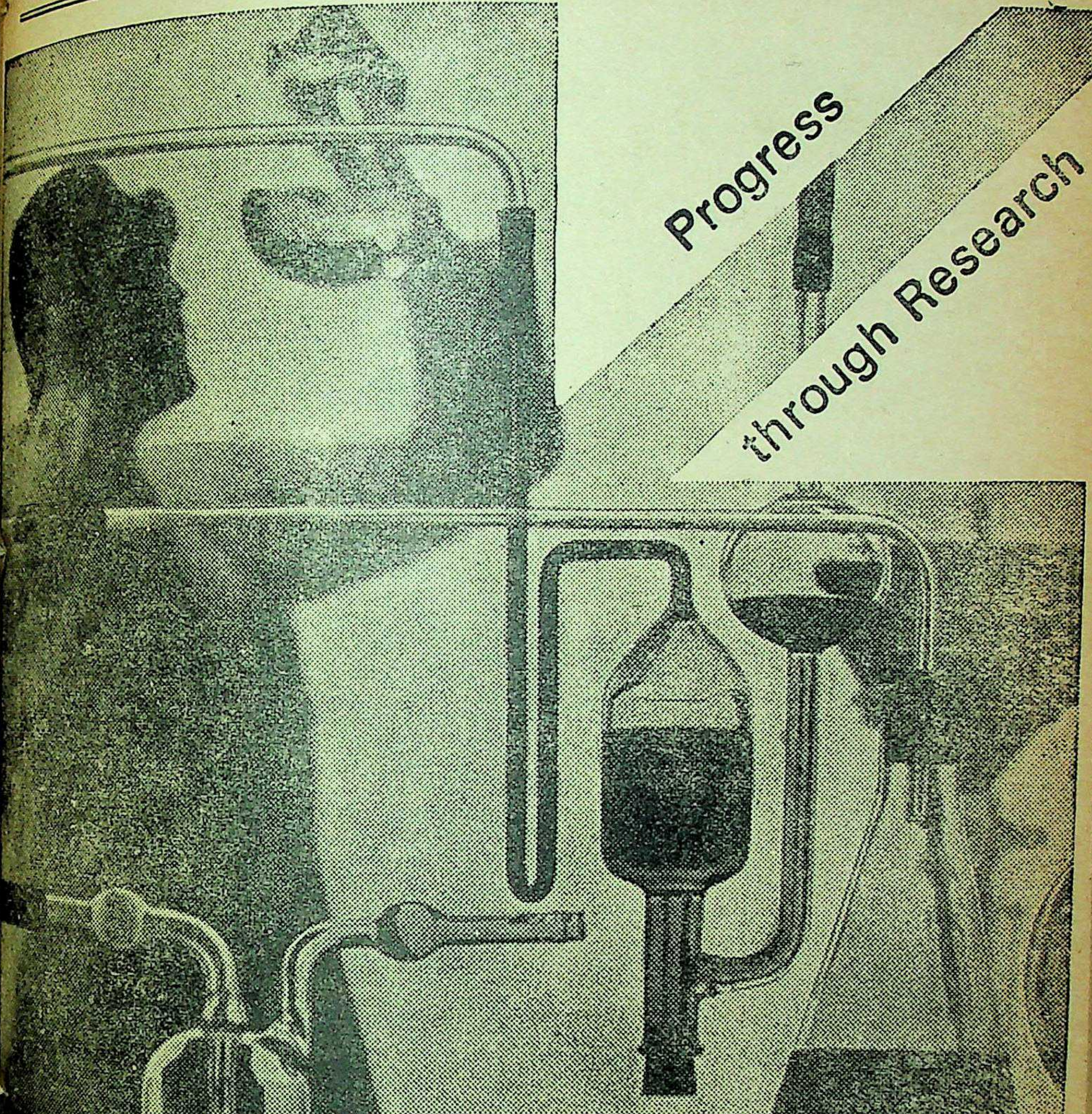

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- cardiovascular disorder
- general debility
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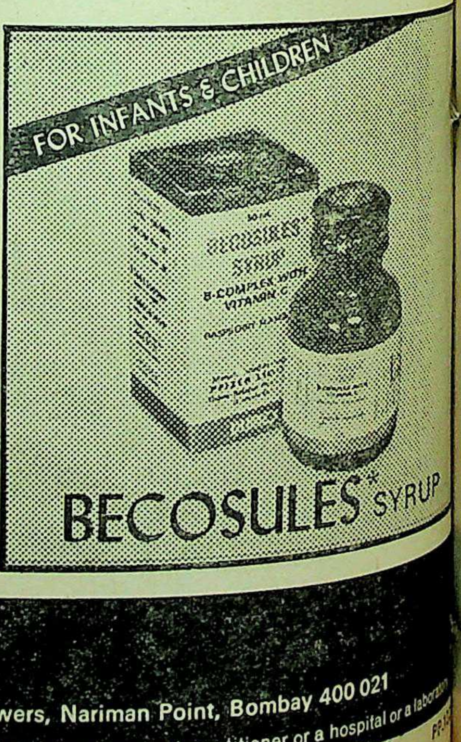
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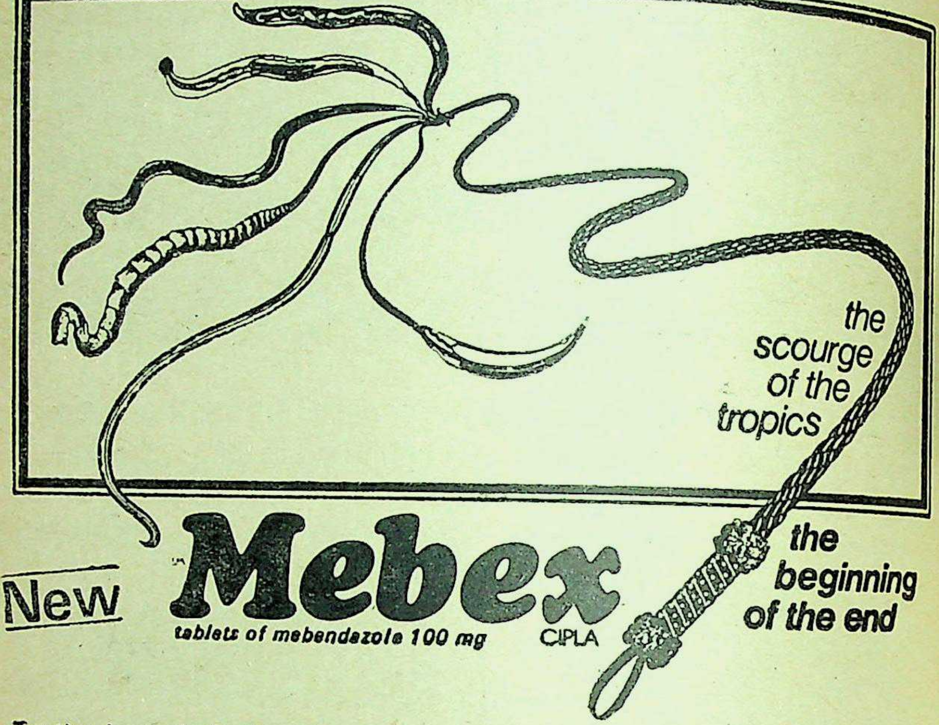
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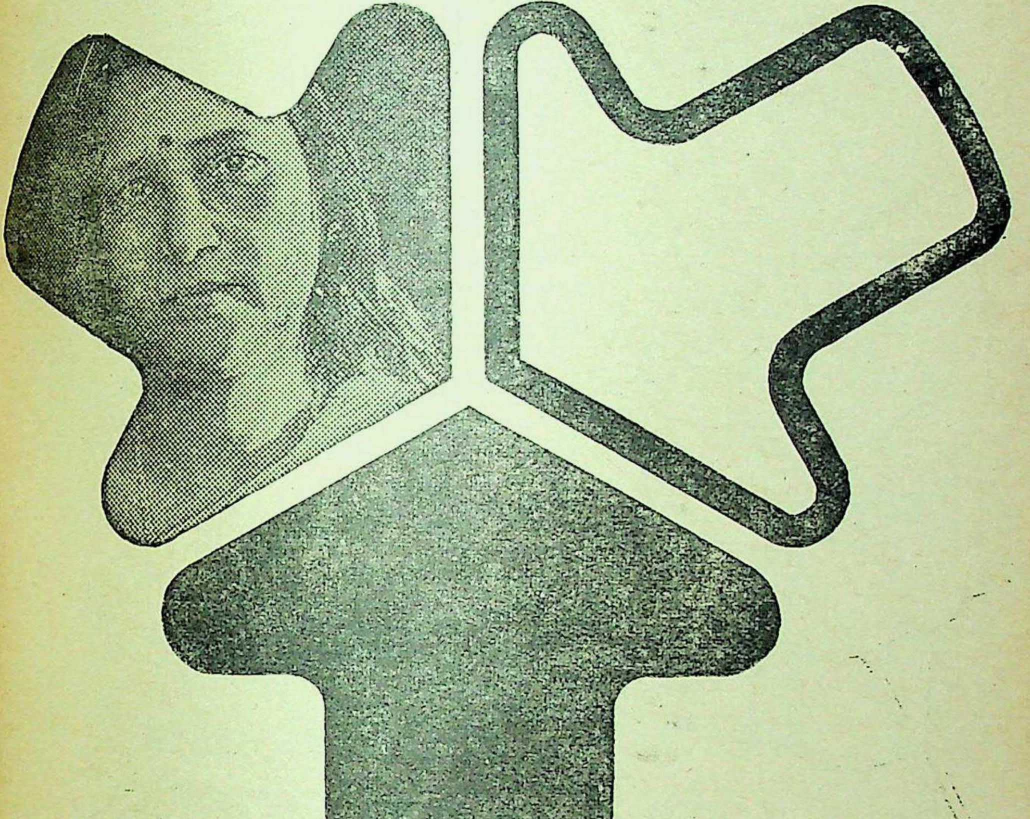

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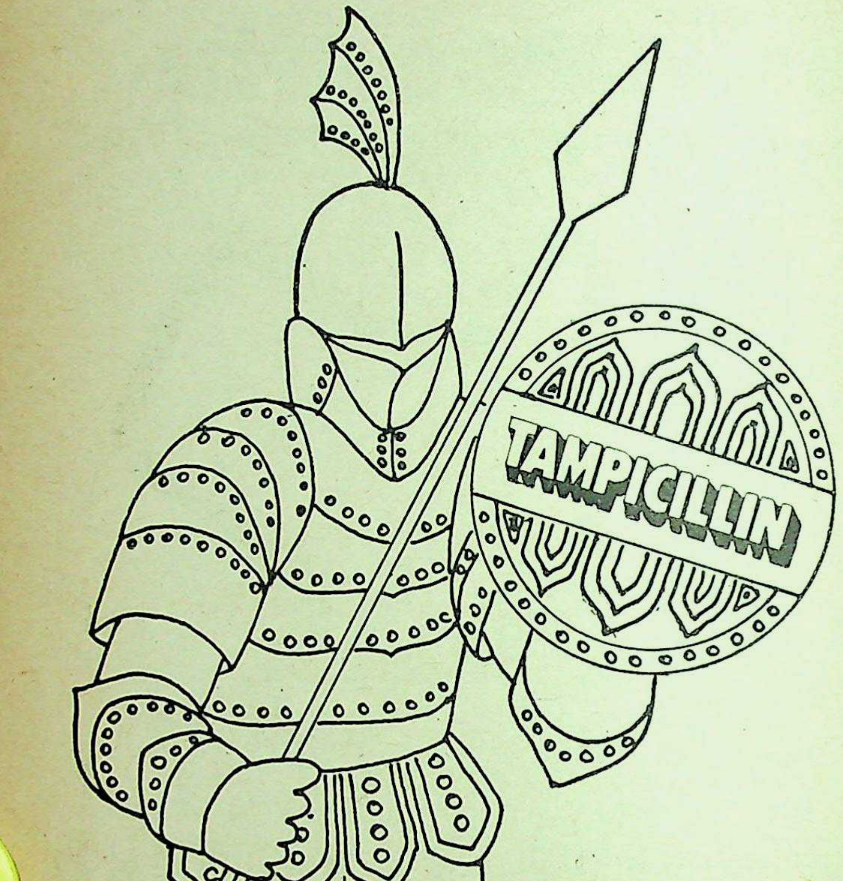

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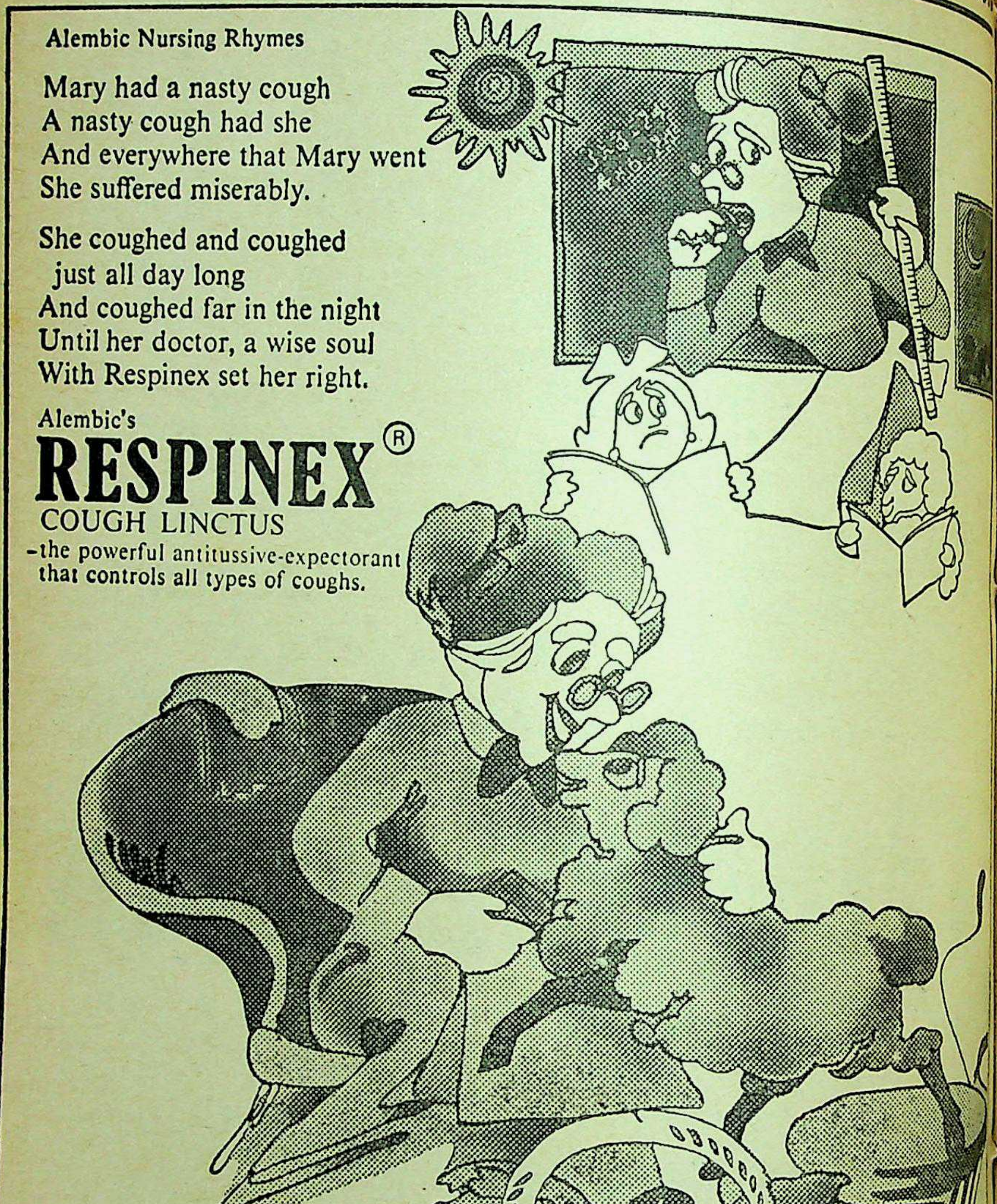

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Vol. 76 | OCTOBER 1979 | No. 10

Original Articles

PREVALENCE OF ASTHMA IN CHILDREN*

N. SOMU, M.D., D.C.H., S. ALAGAR, M.B.,B.S.,
L. SUBRAMANIAM, M.D., D.C.H., K. PREMA, M.B.,B.S.,
B. R. NAMMALWAR, M.D., D.C.H., T. KALPANA, M.B.,B.S.,
AND
G. RANGANATHAN, M.D., D.C.H.,
[From the Institute of Child Health and Hospital for Children, Egmore, Madras-8]

INTRODUCTION:—Asthma is an universal problem. There is no part of the world wherein asthma has not been reported. Its incidence described by various authors is often wide, variable and sometimes conflicting. The criteria for the diagnosis of asthma and the variability of the sampling procedures are responsible for these differences. Further the prevalence rate is modified by nutritional status, social and personal hygiene, per capita income, climatic conditions, industrialisation, over-crowding, health status of the adults and appropriate medical care. The prevalence rate of asthma among south indian children has not been analysed and hence this avenue of investigation was undertaken by us. Asthma has been known to be often associated with tuberculosis in adults. (Urback, Ghosh). This aroused our interest to study the prevalence of asthma in children with tuberculosis and determine the incidence of asthma and tuberculosis in the family members of asthmatic children.

Aim—(1) To determine the prevalence of asthma among the childhood population. (2) To study the incidence of asthma in children with tuberculous infection. (3) To study the prevalence of asthma and tuberculosis in the family members of children with asthma.

---

*Specially contributed to the 'ANTISEPTIC'.

Patients and procedure.—The five year records of in-patient and out-patient department of the Institute of Child Health and Hospital for Children, Madras, were analysed to study the prevalence rate among hospital children. A field study was done in the over-crowded slums, as well as the posh localities of Madras City. Studies were also done in the coastal villages of the State of Tamil Nadu. Studies were conducted to elicit the prevalence of asthma in children with tuberculosis attending the tuberculosis clinic of Institute of Child Health and Hospital for Children, Egmore, Madras. Parents, close relatives and siblings of 1,000 asthmatic children were examined for the presence of tuberculosis and asthma. Adequate control studies were undertaken.

TABLE I

Showing the incidence of asthma among the in patients in institute of child health and hospital for children, Madras-8

Year	Total admissions	No. of A. B. cases	Percentage
1973	21,280	626	2·9
1974	22,232	629	2 8
1975	24 765	675	2·7
1976	27,682	864	3·1
1977	28,864	646	2·6
Total ...	1,58,035	5,370	2·8

TABLE II

Showing the incidence of asthma in children attending out-patient clinics of institute of child health and hospital for children, Madras-8.

Average daily out-patient attendance		Percentage
Total cases	Asthma	
3000	180	6

6% of all out-patient were asthmatic children.

TABLE III

Showing the prevalence of asthma among children of slums of Madras

Slums	No. of children examined	No. of asthma	Percentage
Slum- I	1,483	43	2 93
- II	1 002	26	2·58
- III	846	21	2·49
- IV	1,139	433	2·89
Total ...	4,470	123	2·72

TABLE IV

Showing the prevalence of asthma among children of posh localities

Localities	No. of children examined	No. of asthma	Percentage
1	1,205	8	0·66
2	1,7·20	13	0·75
3	1,321	7	0·53
4	1,567	8	0·51
Total ...	5,813	36	0·59

TABLE V

Showing the prevalence of asthma among coastal villages

Area	No. of cases	No. of A. B.	Percentage
Pushpavanam ...	2,942	4	0·1
Periaguthagai ...	1,903	2	0·08
Sathurangapatnam	2,559	5	0·2
Total ...	7,404	11	·1

The prevalence of asthma among children residing in the well ventilated but not so hygienic coastal villages is about 0·1%.

TABLE VI

Showing the prevalence of asthma among children with tuberculosis

No of children with primary complex	No. of asthmatic children	Percentage
1574	770	48·9

TABLE VII

Showing the prevalence of asthma + tuberculosis in family members of 2,500 A. B. children

Relationship	Tuberculosis		Asthma	
	Number	Percentage	Number	Percentage
Parents	384	16.4	547	21·8
Siblings	193	7·7	241	9·5
Close relatives	78	3·1	61	2·4
Parents and siblings	31	1·2	39	1·5

Discussion.—The incidence of asthma among hospitalised patients reflects the incidence of severe wheezy attacks among the asthmatic children of that locality and area. Yablokov *et al.* (1971) observed a rising incidence of bronchial asthma among hospitalised children. Derrick (1957) reports 1·62% of all hospital admissions in Queensland public hospital was for asthma. This is low when compared to the 2·8% admission rate in Institute of Child Health and Hospital for Children, Egmore, Madras A number of reasons could be attributed for this difference. The environmental factors such as over-crowding, poor hygiene, air pollution, that are probably commonly associated in the busy city of Madras may be responsible for the severe wheezing attacks. Lack of appropriate medical therapy resulting in severe wheezy attacks, may be yet another factor responsible for this variation.

The out-patient incidence of 6% childhood asthma represents concentration of all grades of asthma particularly the less severe and ambulant type. It is agreed that this is not a true reflection of asthma in the population. It however definitely indicates the degree and depth of the problem of asthma in that population catered to by the Institution. It also indicates the basis for assessing the degree of overpopulation, poor hygiene and environmental and air pollution. These factors are accepted beyond all doubts as those responsible for predisposing and precipitating, wheezing in children.

The slum areas chosen for this study, included the population of low socio-economic status. The areas were overcrowded, with poor sanitation and with inadequate water and ventilation facilities. The incidence of 2·7% is comparatively high and could possibly be due to the number of factors mentioned above in addition to parasitic infestation. The very low incidence of 0·6% among the children from higher socio-economic groups with well ventilated, hygienic surroundings is probably due to the lack of the above predisposing and precipitating factors.

Reports from U.S.A. and Australia from their own overcrowded areas give an incidence of between 4·9% and 11%. However this includes the adult population also. In the Scandinavian countries the incidence is between 0·8% to 1·4%.

A similarly low incidence was again observed among the children from the villages. This low incidence can once again be attributed to the absence of environmental pollution (etc).

From this one can draw a logical conclusion that the inci dence and the number of asthmatic attacks can be significantly due to the poor hygiene, over-crowding, air-pollution etc. It is believed that these factors precipitate and aggravate wheezing attacks in children who are predisposed towards asthma.

Urbach in his study of asthma and tuberculosis (194 described, "tuberculo-allergic" asthma. This encouraged us to study the prevalence of asthma among children with tuberculosis. It was observed that 48·9% of children with tuberculosis mani fested more than three wheezy attacks sometime or other during their illness. Control studies to assess the incidence of wheezy attacks among non-tuberculous children showed the incidence to be about 2%.

The prevalence of asthma and tuberculosis among relatives, parents, siblings of asthmatics seems to be comparatively high as compared to the control group. These observations lead us to believe that tuberculosis and asthma are closely inter-related and that there is cluster distribution of these diseases in families.

Conclusion.—Asthma is an universal problem. The prevalence is very mu variable depending upon socio-economic status, the climatic condition an environmental pollution. Higher incidence is observed in population with th above predisposing factors. High percentage of tuberculous children had asth matic attacks. The high prevalence of asthma in adults and siblings of asth matic children is significant. It is suggested that active public health measure including the eradication of over-crowding, poor hygiene, poor ventilation, para sitic infestation would go a long way in reducing the morbidity of asthma i children. Active preventive and curative measures taken against tuberculosi could once again reduce the morbidity of asthma. The close association of adu asthma in these children needs further study and investigation.

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HUMAN AMNIOTIC MEMBRANE

Human amniotic membrane proved to be a versatile and useful tempo rary biologic dressing in 120 patients. Wounds, both traumatic and non traumatic in origin, responded to a protocol that allowed coverage of tissues as diverse as exposed bowel, pleura, pericardium blood vessels, tendon, nerve, and bone. Wounds unresponsive to usual therapeutic measures responded to membrane application. Ease of availability, negligible cost, and facilitated wound healing make this temporary biologic dressing gene rally superior to either cadaver skin allograft or pigskin xenograft. Human amniotic membrane dressings are a useful adjunct in the care of the compli cated wounds.—(*J.A.M.A.*, 1st Dec., 1978).

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TUBERCULOSIS IN COTTON MILL WORKERS*

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INTRODUCTION:—Certain factors like poor nutrition, overcrowding, socio-economic conditions and poor community hygiene (etc.) are directly linked with the prevalence of the tuberculosis in a community. All these factors combined with the influence of a hazardous environment encountered at the work place in the industries play a very positive role in increasing the prevalence of tuberculosis is an industrial community. The working condition might effect tuberculosis in three ways:—(*i*) by undermining general resistance to disease, *e.g.* alcoholism and poverty, (*ii*) by direct damage to the lung tissues, *e.g.* silicosis, and (*iii*) by increasing the risk of infection, *e.g.*, overcrowding at work.

The present study was planned to assess the relationship of tuberculosis with length of exposure to an occupation in cotton mill workers and modes of their clinical presentations.

Material and methods.—For this study, 280 patients from different cotton mills of Kanpur insured with E. S. I. Corporation who attended E. S. I. Chest Hospital Kanpur were selected. They were all males ranging between 22 to 54 years of age. The diagnosis of pulmonary tuberculosis in these patients was made by a panel of three doctors on the basis of sputum positivity by direct microscopy and chest rœntgenogram. After the diagnosis was confirmed, these patients were interrogated by us in detail as regards age, nature of occupation, length of service in the industry and the symptom(s) which appeared first—designated in this study as presenting symptoms. Radiological extent of disease was categorised according to guidelines of the American Thoracic Society (1968).

As these patients were engaged in different departments in the mills, they were classified into five occupational groups:—

1. *Weaving department*:—Included patients engaged in weaving, warping, sizing, winding, looms, fixing, and weaving sheds sections etc.
2. *Spinning department*:—Included patients working in blow rooms, carding, frame and ring sections etc.
3. *Processing*:–Included patients from dyeing, bleaching, jobbers, cloth printing, finishing, calender and mercerising sections etc.
4. *Engineering*:—Included technicians, boilers, oil men, fitters and general coolies etc.
5. *Office*:—Included staff of administration and cost accountant sections including class IV employees.

RESULTS.—Table I indicates that 204 of 280 (72·8%) patients were in the age group of 31 to 50 years and only 10·4% patients were above 50 years of age. 108 (38·6%) patients each were working in weaving and spinning departments of the mills. Office workers appeared to be least affected (Table II). Table III shows pulmonary tuberculosis in relation to length of exposure at work place in different occupational groups 70·7 per cent patients suffering from pulmonary tuberculosis had put up a service of 6 to 20 years in their respective occupational environments. Radiological study of these patients revealed that bilateral involvement of lungs was most frequent in patients of all the occupational groups (Table IV). The most common mode of clinical presentation in these cases was cough with expectoration (48%), followed by fever alone or in association with other symptoms in 27·1 per cent. Haemoptysis was recorded in 11·4 per cent (Table V). Among the associated complications, 34·0 per cent patients had radiological evidence of emphysema, partial atelectasis of lung in 10, anaemia in 12·1 and diabetes mellitus in 1·8 per cents patients respectively (Table, VI).

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*Specially contributed to the 'ANTISEPTIC'.

TABLE I

Showing the age distribution of 280 patients

Age in years		Number of patients	Percentage
22—30	...	47	16·8
31—40	...	106	37·8
41—50	...	98	35·0
Over 50	...	29	10·4

TABLE II

Showing the occupational history of patients

Occupational group		Number of patients	Percentage
Weaving	...	108	38·6
Spinning	...	108	38·6
Processing	...	18	6·4
Engineering	...	34	12·1
Office	...	12	4·3

TABLE III Showing the length of exposure at work place in different occupational groups

Years of exposure		Weaving		Spinning		Processing		Engineering		Office	
		No.	%	No.	%	No.	%	No.	%	No.	%
1 — 5	...	14	5·0	12	4·3	—	—	1	0·3	—	—
6 — 10	...	20	7·1	23	8·2	3	1·0	4	1·4	2	0·7
11 — 15	...	25	9·0	24	8 5	8	2·8	9	3·2	5	1·8
16 — 20	...	24	8·5	30	10·7	5	1·8	12	4·3	4	1·4
Over 20	...	25	9·0	19	6·9	2	0·7	8	2·8	1	0·3

TABLE IV Showing the radiological extent of disease

Extent of disease		Weaving		Spinning		Processing		Engineering		Office		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Unilateral :	Right	20(2)	7·1	15(3)	5·3	3	1·0	7	2·5	3	1 0	48	17·9
	Left	8(1)	2·8	8*	2·8	3	1 0	3	1·0	2	0·7	24	8·6
Bilateral		80(39)	25 5	85(44)	30 3	+12(2)	4·3	24(3)	8·6	7(1)	2·5	208	74·3
Minimal		18(4)	6·4	13(3)	4 6	3	1·0	5	1 8	3	1·0	42	15·0
Moderately advanced		50(17)	17·8	56(26)	20·0	10(1)	3·5	18(2)	6 4	7(1)	2·5	141	50·3
Far advanced		40(21)	14·3	39(18)	14·0	5(1)	1·8	11(1)	3·9	2	0·7	97	34·7

Brackets denote number of patients with emphysema. * One patient had pleural effusion. + One patient had miliary tuberculosis.

TABLE V

Showing the modes of clinical presentations

Presenting symptoms	Weaving		Spinning		Processing		Engineering		Office		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Fever ...	14	5·0	18	6·4	3	1·0	3	1·0	2	0·7	40	14·3
Cough ...	9	3·2	8	2·8	1	0·3	2	0·7	—	—	20	7·2
Fever, cough ...	7	2·5	7	2·5	2	0·7	3	1·0	1	0·3	20	7·2
Cough expectoration ...	51	18·2	54	19·3	9	3·2	14	5·0	6	2·2	134	47·4
Fever, cough, expectoration ...	5	1·8	7	2·5	1	0·3	3	1·0	—	—	16	5·7
Cough, expectoration hemoptysis...	3	1·0	3	1·0	—	—	2	0·7	—	—	8	2·8
Chest pain ...	3	1·0	1	0·3	—	—	2	0·7	—	—	6	2·2
Hemoptysis ...	8	2·8	9	3·2	1	0·3	4	1·4	2	0·7	24	8·6
Cough, expectoration chest pain -	2	0·7	—	—	—	—	—	—	—	—	2	0·7
Pain in abdomen ...	2	0·7	1	0·3	—	—	1	0·3	—	—	4	1·4
Cough, common cold ...	—	—	—	—	1	0·3	—	—	1	0·3	2	0·7
Breathlessness ...	4	1·4	—	—	—	—	—	—	—	—	4	1·4

TABLE VI

Showing the associated complications

Complications	Weaving		Spinning		Processing		Engineering		Office		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Emphysema ...	42	15·0	47	16·8	2	0·7	3	1·0	1	0·3	95	34·0
Partial atelectasis...	10	3·5	13	4·6	1	0·3	4	1·4	—	—	28	10·0
Anæmia ...	12	4·3	15	5·3	2	0·7	5	1·8	—	—	34	12·1
Koch's abdomen ...	2	0·7	1	0·3	—	—	1	0·3	—	—	4	1·4
Miliary tuberculosis ...	—	—	—	—	1	0·3	—	—	—	—	1	0·3
Pleural effusion (left) ...	—	—	1	0·3	—	—	—	—	—	—	1	0·3
Diabetes mellitus...	3	1·0	1	0·3	—	—	—	—	1	0·3	5	1·8

Discussion.—Chib (1967) believes that the industries are not the cause of higher incidence of pulmonary tuberculosis in the population. But in certain industries such as boot and shoe factory (Stewart and Hughes, 1950), printing and those associated with dust, coal and silica, the prevalence of this disease is definitely higher. In our country, the work done in this field is very limited. The National Sample Survey (Indian Council of Medical Research, 1959) estimated prevalence of pulmonary tuberculosis in the range of 1·3 to 2·5 per cent (average 1·8%) of the general population which naturally included people working in industries also. But very few surveys have been conducted to find out the rate of prevalence of pulmonary tuberculosis in the industrial population exclusively and the relationship of industrial occupation with this disease. The Annual Report of the

Employees State Insurance Corporation for 1963-64 for industrial workers recorded a tuberculosis morbidity at 17·42 (pulmonary tuberculosis—12·56 and non-pulmonary tuberculosis—4·86) per 1000 persons among 390,000 people on their rolls or a morbidity rate of 1 75 per cent. Patel and Ambawani (1967) in their study of male textile workers in Ahmedabad observed—prevalence rate for active and probably active pulmonary tuberculosis as 116 per 1000, for healed tuberculosis as 51 per 1000 and non-tubercular lesions as 130 per 1000 people. Goyal *et al* (1974) reported overall prevalence rate of active pulmonary tuberculosis as 19·1 per 1000 including bacillary disease among cotton mill workers. 25 per cent of these cases were minimal and 75 per cent moderately advanced. Workers in spinning departments had a significantly higher prevalence rate (23·1/1000) and workers in the office and engineering sections had the lowest prevalence (13·1/1000). The rate was found significantly higher in older age group.

In the present study, most of our patients were working in weaving (38 6%) and spinning (38·6%) sections of the mills, and had put up a longer duration of service. In all 198 of 280 (70·7%) patients were exposed to their occupational environments for 6 to 20 years, the figures in different occupational groups being 69 of 108 (64 8%) patients in weaving, 77 of 108 (71·3%) in spinning, 16 of 18 (90%) in processing, 25 of 34 (73·5%) in engineering and 11 of 12 (91·6%) in office workers respectively. Patel and Ambawani (1967) held similar views. But unlike these workers, most of our patients had bilateral (74·3%) and moderately to far-advanced disease (84·3%). It has been reported that irrespective of age, sex, and educational levels the knowledge of the patients regarding various aspects of tuberculosis remains very poor (Gupta, 1976). This is one of most important factors for irregular treatment, emergence of drug resistance and progression of the disease. In the series of Goyal *et al*; 75 percent patients had moderately advanced disease. The most common presenting feature in our series was cough with or without expectoration followed by fever. Unproductive cough or in association with other symptoms was noticed in 202 of 280 (72·1%) patients, 76 of 280 (27·1%) had fever and haemoptysis was reported by 32 of 280 (11·4%) patients of which 24 patients had it as the only presenting symptom.

Among the associated complications emphysema was encountered more frequently in those working in spinning (43·5%) and weaving (38 8%) than those working in other departments. Emphysema may occur as a result of cotton dust (Schilling, 1956) or as a complication of extensive fibrocaseous tuberculosis (Lancaster and Tomashefski, 1962). 34 (12·1%) patients were found anæmic with a hæmoglobin less than 10 gm. per cent because of negative folate balance as a result of tuberculosis (Roberts *et al*, 1968: Evans and Allock, 1971). 28 patients had radiological evidence of partial atelectasis of lung—the respective figures in weaving, spinning, processing, engineering and office groups being 10 (9·2%), 13 (12%), 1 (5·5%) and 4 (11·7%). Diabetes was present in 5 patients, Koch's abdomen in 4, miliary tuberculosis and pleural effusion in one patient each.

Summary.—A study of 280 patients suffering from pulmonary tuberculosis was done. They were all males working in cotton mills of Kanpur. The disease was observed more frequently in those working in weaving and spinning departments of the mills and who had put up a service of more than 6 years to 20 years in their occupations. The commonest mode of clinical presentation was cough with or without expectoration followed by fever and hæmoptysis. Radiologically, majority of the patients had bilateral and moderately to far-advanced disease. Emphysematous changes were the commonest associated complication.

Acknowledgements.—We gratefully acknowledge the help and assistance rendered to us by our colleagues Drs. V. N. Sharma, M.B., B.S., D.T.C.D., K. Malaviya, M.D., D.T.C.D., and H. M. Kansal, M.D., D.T.C.D., Medical Officers, E.S.I. Chest Hospital, Kanpur, in preparing this article.

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NEONATAL VAGINAL BLEEDING

Question.—Considerable frank vaginal bleeding was seen in a healthy, apparently normal 5 day old baby. There was no evidence of infection or a foreign body in the vagina, and there is no contributory family history. What is the likely cause of the bleeding? What should be done if it continues?

Answer.—Vaginal bleeding in newborn girls is not uncommon. Following delivery, the infants no longer is stimulated by placental and maternal hormones and frequently exhibits physical findings that reflect that prenatal influence. Breast engorgement is common in both male and female infants, and occasionally secretion of whitish material ("Witch's milk") is seen. Vaginal discharge of a non-purulent. thick, milky-white nature is secondary to estrogen stimulation of the cervical and vaginal glands. This discharge at times is tinged with blood and may be fankly bloody secondary to degeneration of the endometrium. The secretions usually are maximal between the third and fifty day and are generally over by the end of the second week of life. No therapy is necessary.

Other entities to be considered are rare. Hemorrhagic disease of the newborn can appear at this time of life, but gastrointestinal bleeding is a more common presentation. This problem has all but disappeared with vitamin K prophylaxis. Tumors, though extremely rare in the newborn, are always considered in the differential diagnosis. Sarcoma, botryoids and infantile carcinoma of the vagina usually present as masses protruding through the introitus. Anatomic abnormalities such as vaginal polyps and hydrometrocolpos may present with vaginal bleeding. Surgical approach is indicated.

Trauma to the genitalia may occur secondary to breech delivery. Foreign bodies and infections of the vagina have not been reported during the first week of like.—(*J.A.M.A.*, 1st Dec. 1978).

INSULIN SECRETION IN THE DIAGNOSIS OF ADULT ON-SET DIABETES-MELLITUS

Glucose tolerance testing (100g. orally) was characterised by measurement of induced insulin secretion. Diabetic complications of retinopathy, sensory neuropathy, and renal disease developed only in the group of patients in whom the induced serum insulin peak fell below 60μU/ml. Preservation of an insulin secretory reserve that permitted serum insulin peaks of 60μU/ml. or greater was not associated with development of these complications or symptoms of insulin deficiency despite the presence of an equal degree of fasting hyperglycemia and glucose intolerance. A critical amount of insulin secretory reserve distinguishes between two qualitatively distinct clinical syndromes: true diabetes mellitus (the development of signs and symptoms of insulin deficiency) and the syndrome of pure resistance to insulin (signs and symptoms of hyperglycemia in the setting of adequate or excessive insulin secretion, frequently with obesity but without diabetic complication).

There is evidence to support the concept that a demonstration of insulin deficiency should be essential to establish the diagnosis of diabetes mellitus. While there are many conditions that can induce hyperglycemia, the characteristic retinopathy of diabetes mellitus is widely accepted as a diagnostic hall mark of this disease alone. Although the insulin resistant patients and the diabetic patients shared the symptoms relating to hyperglycemia, the insulin resistant patients did not experience the metabolic consequences of insulin secretory deficiency (weight loss, decreased energy, reserve, and progression to complications).—(*J.A.M.A*, 1st. Sept. 1978).

RENAL TUMOURS*

(A Review of 60 Cases)

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INTRODUCTION.—Renal cell carcinoma constitutes approximately 2% of all malignant tumours in adults (Riches, 1963 ; Boyland, 1967 and Ackerman, 1970). Wilms tumour forms one of the major intra-abdominal tumours in childhood (Ragab *et al*, 1972). Renal cell carcinoma is mainly a surgical problem. However pre or post-operative radiotherapy has improved the overall survival. (Rubiu *et al* 1975).

Reports of these tumours in Indian literature are scanty. Sanyal *et al* (1976) reported 54 cases of malignant renal tumours over a period of 7 years. Out of 54 cases, Wilms tumour constituted 35 (14·6%) and 19 were renal cell carcinoma (0·32%).

In the present series a total of 60 renal tumours are reviewed.

Material and methods.—About 60 cases of renal tumours were studied in a period of 20 years. Out of these 60 cases, 58 were malignant and only 2 were benign. All these cases were analysed in detail with regard to age, sex, clinical presentation, investigations, pathological examination and treatment.

Results :—Of the 60 renal tumours 58 were malignant and only 2 were benign. Among the 58 malignant tumours 28 were renal cell carcinomas, 22 were Wilms tumour, 4 were squamous cell carcinomas, 2 were anaplastic carcinomas and 2 were transitional cell carcinoma.

TABLE I

Showing the incidence of malignant renal tumours (58)

Tumour	No.	Percentage
I. Renal cell carcinoma	28	46·6
II. Wilms tumour	22	36·6
III. Squamous cell carcinoma	4	6·6
IV. Anaplastic carcinoma	2	3·3
V. Transitional cell carcinoma	2	3.3

I. **Renal cell carcinoma.**—About 28 cases of renal cell carcinoma were recorded forming a percentage of 46·6. Of these, 17 occurred in males and 11 in females forming a male : female ratio of 17 : 11.

The maximum number of cases were seen between the age groups of 50–61 years (16 cases). In the remaining 12 cases, 6 cases were seen between 30–40 years, 4 were seen at the age of

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*Specially contributed to the 'ANTISEPTIC'.

45 and 2 at the age of 52. The youngest patient was 30 years old and the oldest, 61 years. 20 cases involved the left kidney and 8 cases involved the rt. kidney.

Hematuria was the most common presenting symptom followed by lump in the abdomen. Duration of symptoms ranged from one month to 24 months with a mean duration of 6–8 months. In all the cases the involvement was unilateral.

Diagnosis was established by plain X-ray abdomen, intravenous pyelography and histology. Intravenous pyelography revealed non-functioning kidney or amputation of calyces. Blood urea was normal in 26 cases and 70–80 mg. in 2 cases.

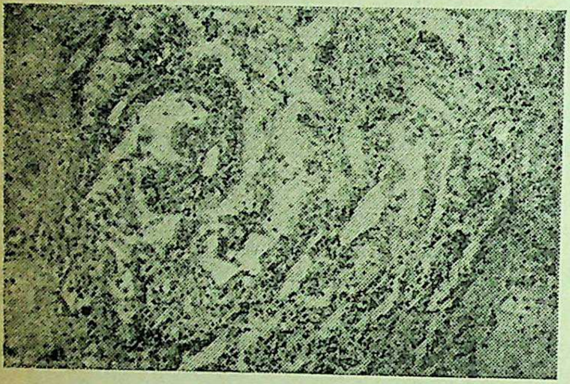

Fig. I. Photomicrograph of renal cell carcinoma showing both granular and clear cells arranged in sheets and tubular pattern. H & E x 100.

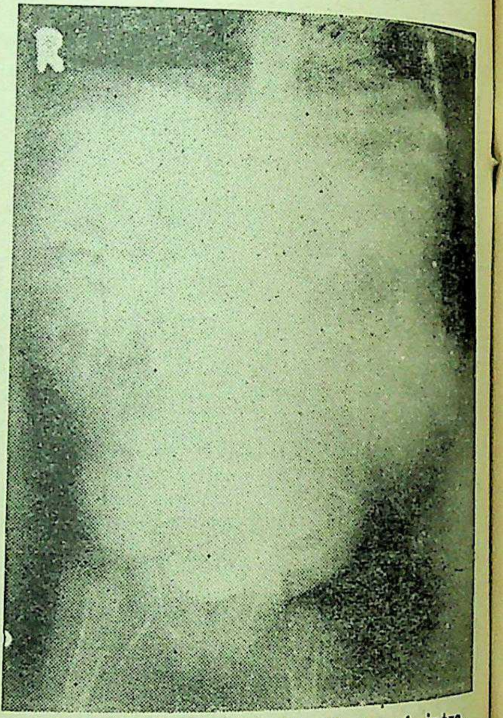

Fig. II. Reduced photo of intravenous pyelogram showing distortion of calyces and absence of secretions on both sides. (Case of Bilatral Wilms tumour).

In all the cases nephrectomy was performed. The nephrectomy specimens varied in size from 16 x 10 x 6 cm. to 18 x 10 x 10 cm.; surface was nodular, soft to firm in consistancy. Cut section revealed variegated appearance with areas of hemorrhage and necrosis. Histologically all cases showed, a mixture of granular and clear cell types arranged in trabecular and tubular arragement.

Post mortem was performed in 2 cases. One case (Male 60 years) with renal cell carcinoma of rt. kidney showed multiple secondary deposits in the rib, heart, liver and lungs. The other case (Male 50 years) with renal cell carcinoma of the left kidney showed secondary deposits in the opposite (Rt.) kidney, liver, lymph nodes (Lumbar, portahepatis and supraclavicular) as well as invasion of inferior vena cava and portal vein.

II. **Wilms tumour.**—About 22 cases of Wilms tumour were found forming a percentage of 36·6. The maximum number of cases were seen between the age groups of 3–4 years. (Table-II.)

TABLE II

Showing the age incidence of Wilms tumour (22)

Age in years	No. of cases
3—4 ...	14
1 ...	1
2 ...	1
2½ ...	1
5 ...	1
6 ...	1
10 ...	2
11 ...	1

The youngest patient was a one year old girl and oldest being 11 years boy; 12 of the patients were girls and 10 were boys.

All the children presented with lump abdomen. Hematuria was present in 5 cases. and pain abdomen in 4 cases. Anorexia and loss of weight was noted in all the cases. Rt. kidney was involved in 16 cases and the left in 5 cases; one case showed bilateral involvement.

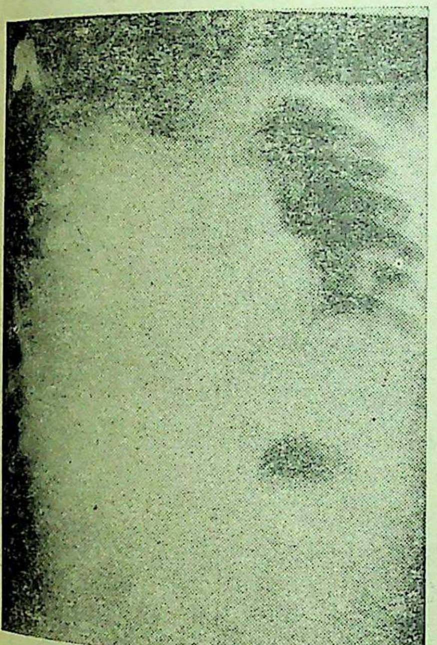

FIG. III. Reduced X-ray chest showing secondary deposits in the lungs and pleural effusion.

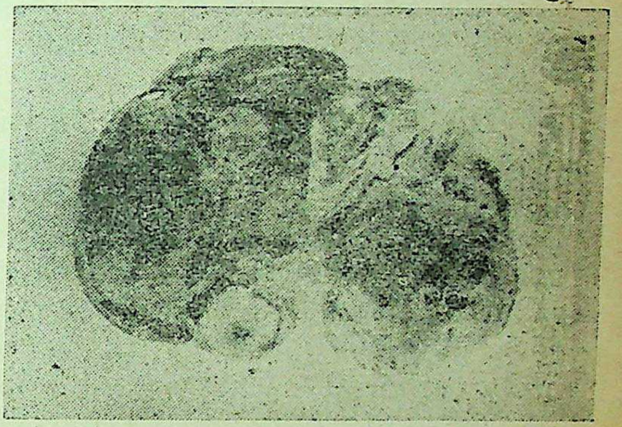

FIG. IV. Cut section of the Wilms tumour showing cartilage, bone and cysts.

Plain X-ray abdomen, intravenous pyelography, routine hematological investigations blood urea and X-ray chest were done in all the cases. Plain X-ray abdomen revealed soft tissue mass on the affected side without any specific radiologic findings Blood urea was normal in all the cases. Hb. value was low in all the cases (4g% to 10g%). Intravenous pyelography revealed distortion of the calyces with absence of secretions on the affected side. X-ray chest revealed secondary deposits and pleural effusion in one case (Fig. III). 5 cases expired and autopsy was performed in 3 cases among which one case showed multiple secondary deposits in the lungs and liver. The case of bilateral Wilms tumour was discharged against medical advice. In the remaining 16 cases nephrectomy was performed.

The nephrectomy specimens varied in size from 17 cm. x 12 cm. to 20 cm. x 18 cm. The surface was smooth to firm in consistency. Cut section of the majority of the specimens was homogenous, and smooth except in one which showed variegated appearance with areas of cartilage, bone and cystic degeneration (Fig. IV). Histological confirmation was available in all the cases.

Other tumours :—About 4 cases of squamous cell carcinoma arising from the renal pelvis were found forming a percentage of 6·6. Three of the cases were males of the age of 41 years to 45 years and one occurred in a female of 65 years. Two cases of anaplastic carcinoma (3·3%) were noticed in 2 females of 50 and 60 years. 2 cases of transitional cell carcinoma were also on record—one was diagnosed through the nephrectomy specimen (Male 50 years) and the other one diagnosed at autopsy when the specimen (Male 50 years) showed secondary deposits in the adrenal, lungs and pancreatic lymphnodes with complete destruction of the kidney.

Among the total of 60 renal tumours, only 2 benign tumours were on record—one was myxoma which occurred in a male of 40 years, and the other one was a angiomyolipoma of the left kidney which occurred in a female of 30 years.

Discussion.—According to Riclus (1963), Boyland, (1967) and Ackerman (1970) renal cell carcinoma constitutes approximately 2% of all malignant tumors in adults. In our country the frequency of kidney tumors is reported to be 0·09% to 2·2% of cell cancers (Jussawalla and Gangadharan, 1974) Sanyal, *et al* (1976) reported an incidence of 0·32% (18 out of 5949 Malignancies) for renal cell carcinoma and 14·6% (35 out of 226 cases of childhood malignancies) for Wilms tumour, Ackerman (1970) reported an incidence of 2% for renal cell carcinoma and Wilms tumour forms 20% of all malignant tumours in children.

In the present series the incidence of renal cell carcinoma is 0·34% (28 out of total 8277 malignancies) and Wilms tumour 14·6% (22 out of 150 cases of childhood malignancies). In renal cell carcinoma and squamous cell carcinoma a male preponderance was noticed whereas in Wilms tumour, girls seem tobe more frequently affected. The left kidney was more frequently affected in renal cell carcinoma (20 out of 28 cases), whereas in Wilms tumour, the right kidney was more frequently affected (16 out of 22 cases).

Wilms tumour forms one of the major intra-abdominal tumours in childhood (Ragab, *et al* 1972). In the present series, Wilms tumour was the second most common tumour next to retinoblastoma, which is in accord with other authors (Pant, *et al* 1974). Bilateral involvement has been reported to be 5—10% (Ragab, *et al* 1972) and In the present series, 21 cases showed unilateral involvement and only one case showed bilateral involvement (2½ years old male child).

In recent years a three pronged attack with surgery, radiotherapy and chemotherapy (Actinomycin D and Vincristine) has completely changed the outlook for Wilms tumour (Ehrlich and

Gordesen, 1973). This is a very radio sensitive tumour inspite of its varied histological components but in more advanced cases it may fail to give good results (Sanyal *et al*, 1976).

The role of radiotherapy in renal cell carcinoma is a controversial one (Vohra, 1968). Theoretically this tumour is radioresistant but Sanyal *et al* (1976) have seen good regression following pre-operative radiotherapy in some cases. Recent reports (Rubin, *et al* 1975) show a definite overall improvement in results by combined surgery and radiotherapy than by surgery alone.

Bloom (1964) reported that kidney tumors are hormone-dependent Progesterone has been used in advanced stages (Pains, *et al* 1970 and Samuel *et al*, 1968). The probable mode of action of progesterones is by a immunosuppressive effect, change in endogenous sex steroid support and direct action on the neoplastic cells (Riches 1963).

In the present series only surgical treatment was undertaken in all the cases. 6 cases came for post mortem examination (Renal cell carcinoma 2, Wilms' tumour 3 and one transitional cell carcinoma) Regarding the other cases a follow up was not possible.

Summary.—Sixty cases of renal tumours (58 malignant and 2 benign) were reviewed in a period of 20 years. Renal cell carcinoma was the commonest tumour among adults whereas Wilms tumour was the commonest intra-abdominal malignant tumour in children.

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PHYSICIANS' USE OF LAPAROSCOPY

If patients are appropriately selected, laparoscopy is relatively free of post-operative complications, and is an effective diagnostic procedure in abdominal malignancy and decompensated liver disease. Laparoscopy is not an alternative to laparotomy, neither are the two procedures mutually exclusive. Most contraindications to laparoscopy are also contraindications to laparotomy, but abdominal sepsis, obstruction, hernias and previous surgery, are additional relative contraindications to laparoscopy when focal liver disease such as metastatic malignancy is suspected. Even if grossly disordered clotting precludes liver biopsy, laparoscopic inspection allows a visual diagnosis of cirrhosis in most cases. Laparoscopic liver biopsy may be safely performed in the presence of ascites. Laparoscopy should be used only infrequently in the investigation of cholestasis, since the level of obstruction can seldom be determined. Laparoscopy allows liver accessible biopsy to be performed from areas of the liver not safely accessible by blind biopsy. Target biopsy through the laparoscope permitted hepatoma to be established as a complication of cirrhosis in 7 cases. Laparoscopic biopsy is usually considered the method of choice when ascites is present. Without laparoscopy many would have been subjected to needless laparotomy. Laparotomy in the presence of diffuse hepatic disease has a high mortality rate. Expensive theatre suites are unnecessary in laparoscopy, so it is a highly effective diagnostic tool in terms of cost, particularly, since a 24 hour admission is all that is needed in uncomplicated cases.—(*British Medical Journal*, 4th Nov. 1978).

UNDISPLACED FEMORAL NECK FRACTURE

Question.—50 years ago patients with simple undisplaced fractures of the femoral neck were treated with bed rest and no weight bearing for three or four months until healing of the fracture line took place. Is this approach still valid, for example, in a 65 years old woman who is otherwise in good physical condition or do all hip fractures, whether displaced or not, have to be pinned and clamped?

Answer.—Ample evidence has accumulated over the last two decades that intra capsular femoral neck fractures that are impacted particularly in the abducted position will usually heal without complications following a period of bed-rest and limited weight bearing even in the elderly or debilitated. The complications of this approach are three fold, a possibility of displacement even in bed; osteonecrosis of the femoral head as a result of the fracture and the morbidity and mortality associated with a prolonged bed rest as a result of respiratory, thrombœmbolic, cerebral, urinary tract or gastro intestinal problems.

Orthopedists have described series of conservatively treated patients, while Bentley has suggested that internal fixation is required. Perhaps the limited procedure suggested by Arnold consisting of percutaneous Knowles pinning of the fracture satisfies both points of view.

The fracture of this patient can therefore be treated with rest and avoidance of weight-bearing, until healing of the fracture-line occurs; on the other hand, there are individuals and centers who would suggest that fewer complications would result if the fracture were fixed internally using a method such as Knowles pins.—(*J.A.M.A.*, 2nd June, 1978).

BENIGN LIVER TUMOURS AND ORAL CONTRACEPTIVES

In recent years there have been increasing reports suggesting an association between development of benign liver tumour and the use of oral contraceptives. Most benign liver tumour cases present with right upper quadrant pain or mass. Occasionally, they present with shock, secondary to intra abdominal hæmorrhage. Physicians who are treating patients with oral contraceptives should be aware that benign hepatic tumours can occur and be aware of signs which can indicate their presence.—(*New York State Journal of Medicine*, Oct. 1978).

COIN LESIONS OF THE LUNG—NEED FOR SURGERY*

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Definition.—"Coin lesions" or solitary pulmonary nodules are single, well circumscribed lesions in the lung, about 4 to 5 cm. in size. The term has been applied to lesions of greater dimension also. Depending on the size, Eric M Bateson grouped the coin shadows into three groups.[1] (*i*) Small shadows-under 5 cm. in diameter. (*ii*) Large shadows—5 to 6·9 cm. in diameter. (*iii*) Massive shadows-7 cm. and over in diameter.

The term "coin lesion" was introduced by Thornton, Adams and Block in 1944. The lesion is usually situated in the periphery of lung, surrounded by comparatively uninvolved lung tissue.[9]

Aetiology of coin lesion.—The coin lesions can be classified as follows.

I. **Congenital** —(*i*) Fluid containing cyst—developmental aberration, (*ii*) Sequestrated segment, (*iii*) Arterio-venous aneurysms, (*iv*) Congenital atresia of a bronchus resulting in mucoid impaction.

II. **Inflammatory and infective**.—(*a*) *Bacterial* :—(*i*) Tuberculoma, (*ii*) Pneumonia, (*iii*) Lung abscess, (*iv*) Interlobar pleural effusion, (*v*) Brucellosis, (*vi*) Abscess, (*vii*) Empyema.

(*b*) *Fungal* :—(*i*) Histioplasmosis, (*ii*) Mycetoma (Aspergillus fumigatus), (*iii*) Actinomycosis, (*iv*) Toruloma (Cryptococcus neoformans), (*v*) Coccidiodomycosis, (*vi*) Penicillium granuloma.[7]

(*c*) *Parasitic* :—(*i*) Hydatid cyst (Ecchinococcal cyst), (*ii*) Dirofilaria immitis.[8] (*d*) *Spirochaetal* :—Gumma.

III. **Neoplastic** —(*a*) *Benign* :—(*i*) Bronchial adenoma, (*ii*) Leiomyoma, (*iii*) Hamartoma, (*iv*) Fibroma, (*v*) Lipoma, (*vi*) Neurofibroma, (*vii*) Hæmangioma, (*viii*) Lymphangioma, (*ix*) Ganglioneuroma, (*x*) Hibernoma, (*xi*) Endometrioma, (*xii*) Amyloidoma.[4]

(*b*) **Malignant** — (1) *Primary* :— (*i*) Bronchiogenic carcinoma, Squamous cell carcinoma, Oat cell carcinoma, Adeno-carcinoma, Undifferentiated carcinoma, (*ii*) Sarcoma, (*iii*) Lymphosarcoma, (*iv*) Mesothelioma, (*v*) Plasmacytoma,[8] (*vi*) Hæmangiopericytoma. (2) *Secondary* :—Primary elsewhere.

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*Specially contributed to the 'ANTISEPTIC'.

Of 705 cases reviewed by C. Allen Good and Theodore, 10 cases were presumed metastatic, the common sites of the primary being colon and rectum (25) Eye, ear, nose and throat (15) Female genital tract (14) kidney and bladder (11) skin (melanoma) (7) Female breast (7) [6]

In the study of O. Theron Clagett and Lewis B, Woolner, out of 169 resected solitary pulmonary metastasis at Mayo clinic (1941–59), the primary sites were, rectosigmoid (21·8%) breast 12·7%) colon (9·7%) kidney (7·3%) skin (7·3%).[3]

IV. **Miscellaneous** :—(*i*) Infarct, (*ii*) Nonspecific granuloma, (*iii*) Wegener's granuloma, (*iv*) Paraffin granuloma, (*v*) Rheumatoid nodule, (*vi*) Dilated bronchus with secretion, (*vii*) Pericardial cyst, (*viii*) Diaphragmatic hernia, (*ix*) Pleural plaque, (*x*) Foreign body, (*xi*) Varicosity of pulmonary vein, (*xii*) Chest wall tumours—sometimes simulate solitary pulmonary nodule, (*xiii*) Liver hernia.

Incidence and percentage of malignancy.—During routine chest X-ray survey of about 600,000 people, Holin and co-workers discovered 666 solitary pulmonary nodules. The percentage of malignancy was three.[9] In 1958, Garland published 1956 cases of coin lesions of which 26% were malignant. In 1956 Taylor *et al* described 236 cases with 9·7% of malignancy.[5] In the study of resected asymptomatic solitary pulmonary nodules 6·0 cm. or less in diameter in 887 patients by John. M. Steele and San Fernando, 316 were malignant.[10]

Clinical features.—Patients are usually asymptomatic. The only symptoms that may be present are mild chest pain or occasional hemoptysis. Detection of a solitary pulmonary nodule almost always depends on routine chest X-ray.

In a radiological study of 100 cases by Eric. M. Bateson symptoms referable to chest were absent in 38 patients and present in 58 patients. No clinical details were available in 4 cases. Four of the patients had pulmonary osteoarthropathy, five had fever, one had peripheral neuritis and one had evidence of obstruction to superior vena cava[1]

X-ray features.—In general, tuberculomas are mainly in an apical or subapical segment posteriorly and malignant lesions are in lower lobes. But site of lesion is of little help in the diagnosis.

In 1955, Rigler drew attention to a "Rœntgen sign" (Rigler's notch) in solitary pulmonary nodules indicative of malignancy. The sign consists of notching or umbilication of a border of the shadow best seen in sectional films. It may occur in a tuberculous lesion also.[9]

David Bryk in 1969 described a rœntgenographic sign called "Participating tail" (Fig. IV) in solitary pulmonary noduless which was seen in both bronchogenic carcinoma and pulmonary granuloma.[2]

O'Keefe and co-workers studied 207 specimens of solitary pulmonary nodules removed by operation. Calcification was found in 49 6 percent of benign and 13 8 percent of malignant lesions[9].

CASE REPORTS:—1. G.K.N., male aged 58 years, heavy smoker for 30 years presented with breathlessness of three weeks' duration. Clinical examination revealed rhonchi over both sides of the chest. Chest X-ray showed a coin lesion in the right upper zone. (Fig. I) Scalene node biopsy showed sarcoid reaction in lymph nodes. Bronchogenic carcinoma was the first clinical diagnosis, especially in view of the patient being a heavy smoker and aged 58. Thoracotomy revealed a tumour in the right upper lobe. Right upper lobectomy was done. Histopathological examination revealed a benign chondroadenoma. Without thoracotomy, chemotherapy or radiotherapy might have been initiated with a presumptive diagnosis of bronchogenic carcinoma. Surgery which led to the diagnosis of a benign lesion, completely altered the prognosis and allayed the anxiety of the patient and relatives. Surgery has also proved curative.

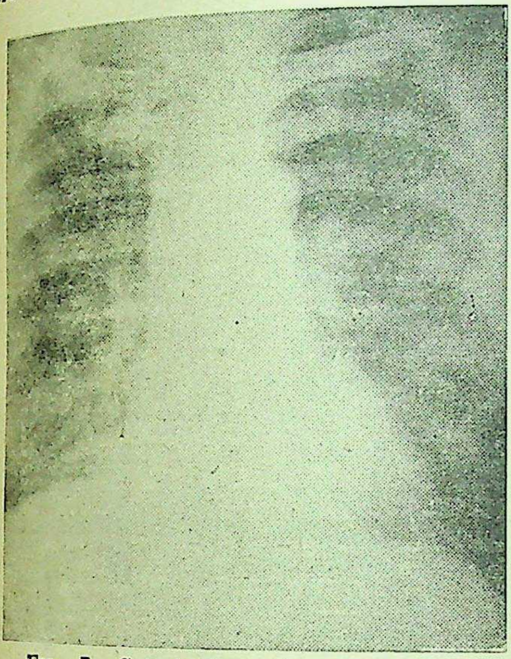

FIG. I. Coin lesion right upper zone

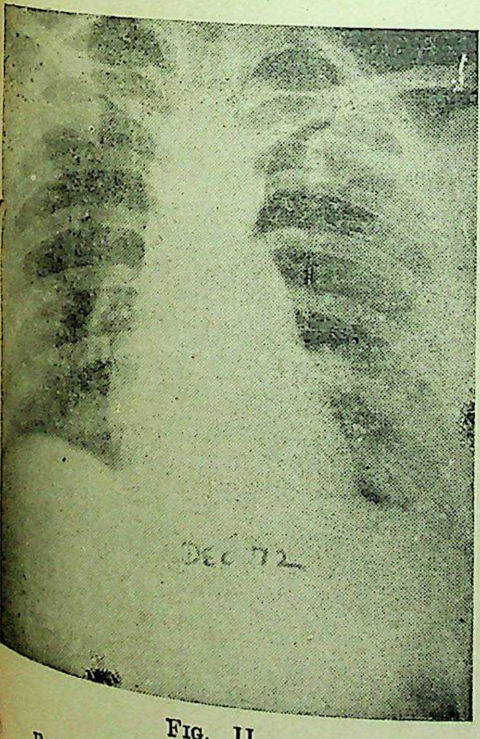

FIG. II.

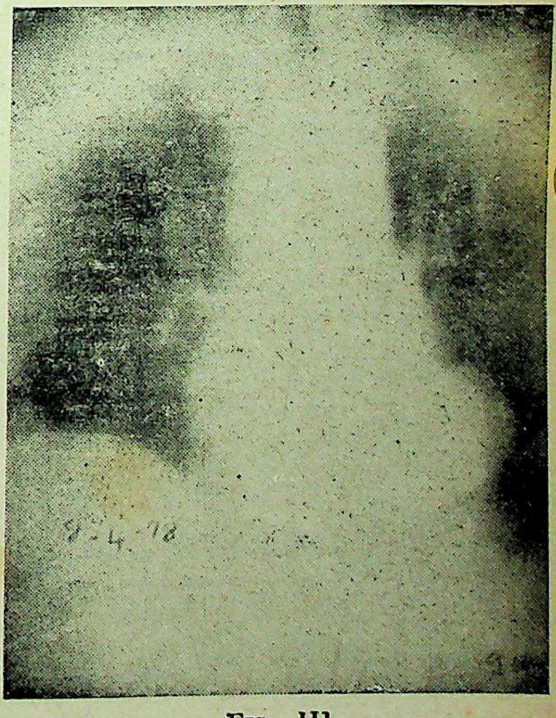

FIG. III.

FIG. II. & FIG. III. Coin lesion left lower zone progressively increasing in size, first taken in 1972 again in 1978

2. A.K.P., male 53 years old had been a heavy smoker for 20 years. He presented with vague left sided abdominal pain of 3 month duration. Clinical examination was not contributory. A routine chest X-ray showed a coin lesion in the left lower zone. A course of antibiotic therapy was given with no radiological improvement. A left thoracotomy was done to establish a definitive diagnosis. A tumour was found and a left lower lobectomy was done. Histological diagnosis of benign adenoma of lung with early carcinomatous change was made out. In this case surgery helped in making a definitive diagnosis and resecting the primary growth. Removal of a benign tumour with minimal early carcinomatous change helped to reassure the patient. It is also of interest to note that with the background of his age and history of heavy smoking, bronchogenic carcinoma was the most likely diagnosis. Operative finding of a benign tumour with early malignant change was a total surprise. Though secondaries have to be watched for during follow up, the chances of a 'cure' are bright.

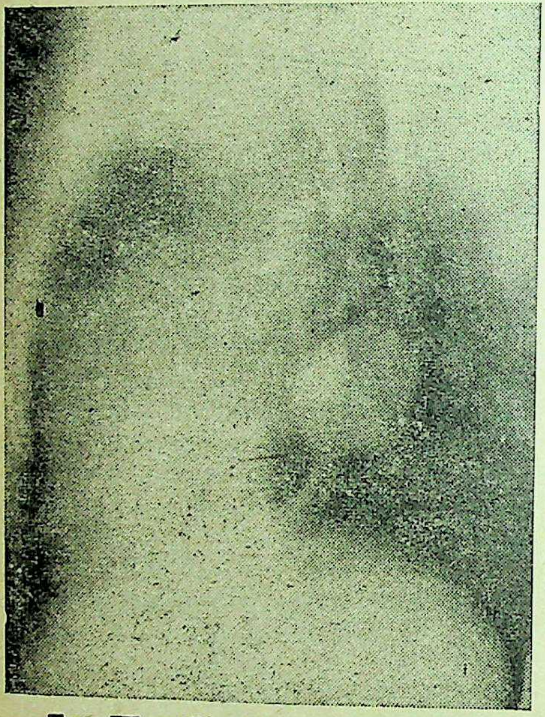

FIG. IV. "Participating tail" in a coin lesion

3. P, female aged 35 years presented with a coin lesion left lower zone. Serial X-rays showed progressive increase in size of the lesion since 1972. (Fig. II and Fig. III). She was asymptomatic except for occasional chest pain. The slowly progressive nature of the mass suggested a benign lesion. It could not be determined whether it was a tumour or inflammatory mass. Surgery led to the diagnosis of a carcinoid tumour. Surgery not only helped in establishing a definitive diagnosis, but prevented complications such as pressure effects on the bronchus. The tumour could have turned malignant also.

In establishing an ætiological diagnosis, L. Henry Garland in 1960 has described a "Three step method" for diagnosis of solitary pulmonary nodules.[5] They are.

FIRST STEP :—*Radiological examination and criteria* :—Postero-anterior, oblique, lateral view, depending on site of lesion. Posterior lordotic view, penetrating view, tomogram and fluroscopy as indicated.

SECOND STEP :—*Clinical criteria* :—Age, sex, presence or absence of thoracic symptoms and history of recent thoracic tap or surgery.

THIRD STEP :—*Laboratory data*:—Skin tests or complement fixation tests for tuberculosis, coccidiodomycosis histioplasmosis etc., sputum examination for tubercle bacilli and tumour cells.

Surgical treatment and results.—In most instances lobectomy or segmental resection provides an effective treatment and helps to establish a definite diagnosis.

Surgery is indicated because it is comparatively a safe procedure. Almost always all clinical tests will be negative and no clinical diagnosis could be made out. Hence surgery is advisable to establish a definitive diagnosis and often also proves curative if the lesion is benign. Unnecessary chemotherapy or radiotherapy, and the psychological stress due to fear of harbouring cancer can be avoided. Surgery also helps in diagnosing rare causes of coin lesions. If an inflammatory lesion is confirmed by surgery, specific anti-tuberculous, anti-syphilitic or anti-fungal chemotherapy can be started.

Conclusion.—Coin lesions are often encountered in asymptomatic or minimally symptomatic patients during routine chest X-ray. Routine tests often fail to establish a definite ætiological diagnosis. Early surgery is recommended. Surgery helps in giving a definitive diagnosis and could often prove curative.

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THE SIGNIFICANCE OF HYPOTENSION DEVELOPING DURING TREADMILL EXERCISE TESTING

The significance of hypotension developing during treadmill exercise testing was evaluated and correlated with the findings at cardiac catheterization in two groups of patients. Twenty-five patients (group I) had a fall in systolic pressure during exercise and were compared with 50 consecutive unselected patients (group II) with a normal blood pressure response. Clinical characteristics, resting hemodynamics, angiographic characteristics such as contraction abnormalities, and the number and distribution of diseased coronary vessels were similar in both groups. Hypotension in women does not necessarily connote coronary artery disease. Men with hypotension have a higher incidence of coronary artery disease, but the extent and distribution of their disease is no different from that of patients with a normal blood pressure response to exercise.—(*J.A.M.A.*, 1-12-1978).

RADIOTHERAPY FOR PAINFUL HEEL SYNDROME

Seventeen patients with the painful heel syndrome were treated by a dose of 1,000 rads in five treatments given two or three times a week. Eleven patients showed improvement-nine having complete and two partial relief. In eight, improvement was immediate. Three others improved after two weeks, two months, and three months. Follow-up varied from two to 43 months; two were lost to follow up. There were no side effects of treatment, and possible risks of genetic damage or induction of malignancies are considered insignificant.—(*J.A.M.A.*, 19-1-1979).

ROLE OF REPEATED BIOPSY OF PLEURA IN THE DIAGNOSIS OF PLEURAL EFFUSION*

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NEEDLE biopsy of the pleura has established itself by virtue of its reputation as one of the most important diagnostic tools to clinch the diagnosis, by means of a histopathologic study. Different types of needles, variable results and rate of complication have been described in the literature. Little however has been mentioned about the specific role of repeated biopsy in the establishment of a diagnosis. The present study was, therefore, conducted to secure some factual information regarding the value of repeated pleural biopsies in the diagnosis of pleural effusion.

Material and method.—This study included 40 and 15 provisionally diagnosed cases of tubercular and malignant pleural effusions admitted into the S. R. N. Hospital and Govt. T. B. Hospital, Allahabad. A detailed history and thorough clinical examination followed by all the routine investigations were done in each case. Only provisionally proved cases of tubercular and malignant pleural effusion were included in this study. The diagnostic criteria for provisional tubercular pleural effusion were fixed as follows (*a*) history of previous illness of tuberculosis, (*b*) history of close contact (*c*) symptomatology, (*d*) physical signs of infiltration, cavitation and fibrosis (*e*) radiological evidence of a tubercular lesion, (*f*) sputum positive for A.F.B., (*g*) colour of pleural fluid, (*h*) biochemical examination of pleural fluid. The provisional diagnosis of malignant pleural effusion was based on (*a*) age above 40 years (*b*) radiological evidence of a malignant shadow, (*c*) hæmorrhagic pleural fluid (*d*) rapid refilling of the pleural space.

The Abram punch biopsy needle was used to take the pleural tissue. Scapular line. posterior and mid axillary line were selected as sites to take the biopsy specimen. In order to avoid the pathologist's bias, the experiment was kept strictly blind *i e.*, the provisional diagnosis of the cases was withheld from pathologists who were supposed to confirm a histological diagnosis.

The first biopsy was performed in each case of the tubercular and malignant groups. The second and third biopsies were performed in only those cases in which specific histological diagnosis could not be established. In the malignant group, two patients refused to go for a third biopsy.

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*Specially contributed to the 'ANTISEPTIC'.

TABLE I

Showing the results of serial biopsies in 40 provisionally diagnosed tubercular pleural effusion cases

	Total Number of cases	Histological diagnosis			
		Tuberculosis	Chronic non-specific	Normal tissue	Inadequate tissue
1st biopsy ...	40	12 (30%)	14 (35%)	6 (15%)	8 (20%)
2nd biopsy ...	23	14 (60 87%)	5 (21·74%)	3 (13·04%)	1 (4·35%)
3rd biopsy ...	3	2 (66·67%)	1 (33·33%)	—	—

TABLE II

Showing the results of serial biopsies in 15 provisionally diagnosed malignant pleural effusion cases

	Total Number of cases	Histological diagnosis			
		Malignant	Chronic non-specific	Normal tissue	Inadequate tissue
1st biopsy ...	15	6 (40%)	2 (13·33%)	4 (26·67%)	3 (20%)
2nd biopsy ...	9	5 (55·56%)	3 (33·33%)	1 (11·11%)	—
3rd biopsy ...	3	2 (66·67%)	1 (33·33%)	—	—

Discussion.—The need for a repeat biopsy in cases where first specimen is unsatisfactory or non contributory has been stressed by various workers (Welsh 1958, Weiss 1961, Pragani, *et al* 1962, Sisson and Weiss 1962, Rajkondawar, *et al* 1963, Scerbo, *et al* 1971) and Deshmukh, *et al* 1972).

Adequate tissue in the first pleural biopsy to the extent of 74% to 100% have been reported in the literature by some workers in their series. But the adequate tissue had not yielded the diagnostic accuracy in cent per cent of cases. We are of the view, that the reason for failure in positivity inspite of getting a pleural tissue in first biopsy may be, that the pleura is so wide that the site of biopsy tissue may have normal pathology or may be non-specific. Only a repeat biopsy at another site is the solution to enhance the chances of a positive yield.

The overall improvement in the percentage of positivity due to repeated biopsies has been reported to be from 8% to 16% from that of first biopsy (Scerbo *et al* 1971–8%, Levine and Cugell 1962–14% and Deshmukh *et al* 1972–16%).

In our study, Table 1 shows results of serial biopsies (upto 3) among cases of clinically diagnosed tubercular effusion. Second and third biopsy could not be performed in 7 and 6 cases respectively. Thereby the absolute value of each serial biopsy is indicated by the positive yield in each biopsy. There is considerable improvement in positive yield in repeating the biopsy second time (25% to 60·87%). In the third biopsy there is an improvement though not very large (60·87% to 66·6%). The second biopsy showed 35% improvement over the first biopsy. And overall improvement in third biopsy was 40%. This diagnostic occuracy might have improved further (10% to 20%) in repeat second and third biopsies respectively, if all left out cases could have been included.

In malignant pleural effusion cases, the second biopsy improved the result of the first biopsy from 40% to 73·34%. The third biopsy further improved the diagnostic accuracy *i.e.*, upto 86·67% (46·67% overall improvement). The improvement obtained in a repeat biopsy indicate that three successive biopsies are necessary to increase the positive yield.

Summary.—A study of repeated pleural biopsies (upto 3) of 40 and 15 cases of provisionally diagnosed tubercular and malignant pleural effusion respectively, were carried out. The overall improvement in positivity was 40% in tubercular and 46·67% in malignant group. It is concluded that repeated biopsies are necessary to increase the diagnostic accuracy.

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POST-ANAESTHETIC OXYGEN

After surgery under general anæsthesia most patients have a lower arterial oxygen tension than before operation. Should they all be given oxygen? Respiration may be depressed both by anæsthetic agents and by morphine like drugs leading to underventilation and increase in carbon-dioxide a reduction in oxygen tension. Should oxygen be prescribed routinely after general anæsthesia? Certainly it should be given to the elderly and those with additional cardiovascular disease, and to patients who are having upper abdominal or thoracic surgery or have had prolonged nitrousoxide anæsthesia, especially when they have been overventilated. But oxygen should not be a panacea to compensate for excessive respiratory depression from drugs and poor anæsthetic technique. It should be prescribed in a known concentration for a specific time for those who need it. As Steel suggested, asking the conscious, pain-free patient to take a few deep breaths of air may be just as effective.—(*B.M.J.*, 25-11-1978).

DAPSONE IN THE TREATMENT OF PEMPHIGUS VULGARIS:

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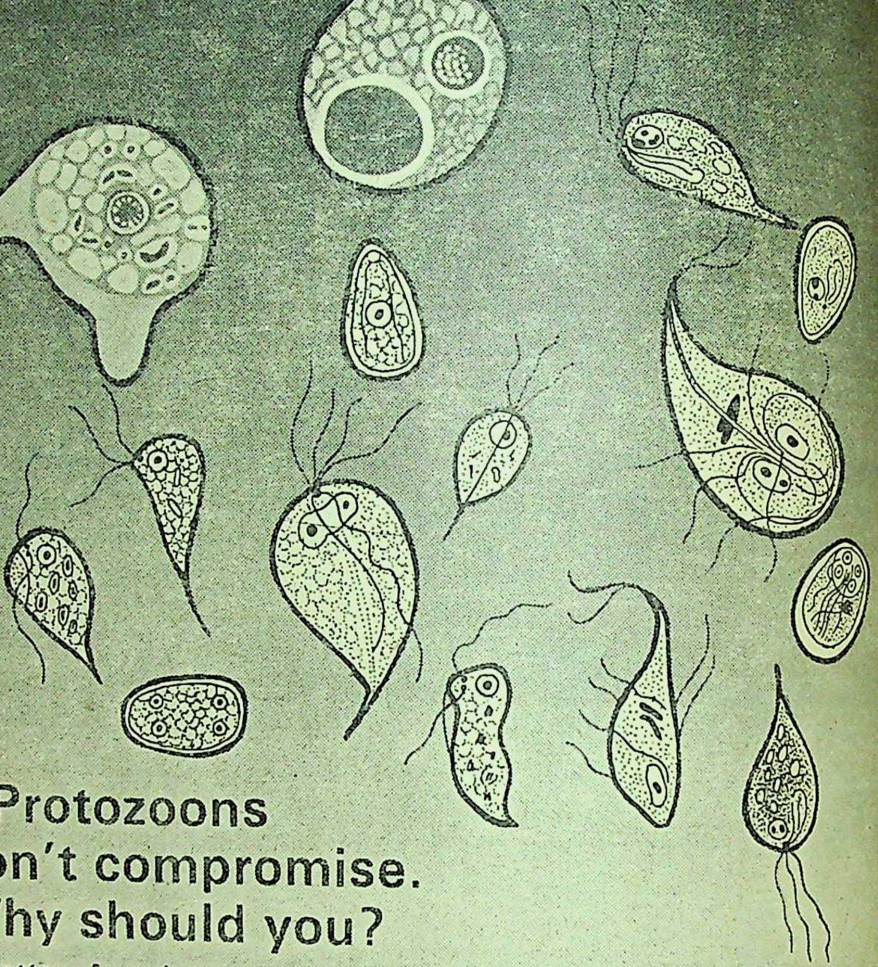

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CLINICAL TRIAL ON *FRAMYCETIN* IN GASTROENTERITIS IN CHILDREN*

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R. NARMADA, M.D., D.C.H., *Associate Professor of Pediatrics and Deputy Suptd.*
AND
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INTRODUCTION:—Gastroenteritis is one of the commonest problems and the cause of major illness in young children, next only to respiratory infections. One of the main causes of gastro enteritis is bacterial infection. This study has been conducted to find out the efficacy of a newer anti-bacterial preparation containing Soframycin (Framycetin sulphate), kaolin and pectin in cases of gastro enteritis in children.

Material and method.—This study was conducted from May 1978 to August 1978 in the Thirumangalam sub centre which is one of the eight sub-centres of Integrated Child Development Services attached to the Institute of Child Health and Hospital for Children, Madras. Children with gastroenteritis were selected from those who were attending the subcentre for outpatient services.

TABLE I

Showing the agewise and sexwise distribution of the children taken up for the study is as follows :

Age group		Total Number of children	Male	Female
0 – 1 year	...	31	21	10
1 – 2 years	...	30	18	12
2 – 3 years	...	16	12	4
Above 3 years	...	17	11	6
Total	...	94	62	32

The children who came to the subcentre for diarrhœa and vomiting for which no previous treatment has been given were taken up for trial.

The diarrhoea has been given grades as follows :—

GRADE 0 :—Normal or near normal frequency of normally formed stools. 1 to 2 per day.

GRADE I :—Frequency of stool 2—4 per day with presence of loose fæcal matter.

GRADE II :—Frequency of stools 5—10 times per day, tending to become watery.

GRADE III :—Frequency of stools more than 10 times of watery consistency.

The grading of vomiting is as follows :—

GRADE 0 :—Near normal. Vomiting 1—2 times.

GRADE I :—Vomiting occurring 3—5 times.

GRADE II :—Vomiting 5 to 10 times.

GRADE III :—Vomiting more than 10 times.

---

*Specially contributed to the 'ANTISEPTIC'.

In this study the grade of diarrhœa and vomiting are as follows (Table II).

TABLE II

Grade		Diarrhaea	Vomiting
I	...	58	0
II	...	22	10
III	...	14	0
Total	...	94	10

Since only outpatients services were rendered in the integrated Child Development Services subcentres, dehydrated cases were not included in the study.

All children were clinically checked up and a stool examination was carried out both macroscopically and microscopically on the 1st day. On the same day a rectal swab was taken for all the children and was brought to the Institute of Child Health and Hospital for children, for culture study within one hour of taking the swab. Treatment was started for all the cases without waiting for the culture reports. The children were given Framycetin sulphate 50 mg./kg. body wt. in four divided doses for four days.

Associated infections and infestations if any were treated simultaneously; the children were brought to the subcentre on the 3rd day of the treatment and the clinical improvement in diarrhœa and vomiting were noted. Again on the 5th day a review was made to determine the improvement and stool examination was also repeated to know the efficacy of the drug.

Results and observations.—The microscopic examination of the stool of the 94 children of the 1st day revealed the following findings.

TABLE III

Showing stool findings

			No. of children	Percentage
1	Bacteria	...	61	64·9
2	Bacteria with giardiasis	...	4	4·3
3	Bacteria with worm infestation	...	6	6·4
4	Giardiasis	...	10	10·6
5	Worm infestations	...	6	6·4
6	Trichomonas	...	4	4·3
7	E. H.	...	3	3·2

TABLE IV

Showing the stool culture report of all the children

	Organisms isolated		No. of cases	Percentage
1	E. coli	...	34	36·2
2	Klebsiella	...	10	10·6
3	Enterobacter	...	11	11·7
4	Gram positive cocci		9	9·6
5	Enterococci	...	4	4·3
6	Candida	...	3	3·2
7	No growth	...	23	24·5

Of the 34 cases with E. coli, 2 cases were enteropathogenic. In all the 10 cases with Klebsiella, associated worm infestations and respiratory infections were treated. Hence the presence of Klebsiella in this study may be pathogenic.

On the 3rd day, the improvement of diarrhœa and vomiting were clinically assessed and noted as follows :—

TABLE V

Showing the clinical improvement

Age groups	No. of children	Improvement on the 3rd day				
		Marked	Moderate	Minimal	Unchanged	Worse
0 – 2 years	61	1 1·6%	7 11·8%	33 54%	20 32·7%	—
Above 2 years	33	1 3·0%	2 3·0%	21 63·3%	9 27·2%	—

Marked :—Complete or near complete remission (passing formed stools once or twice a day).

Moderate :—Partial remission (passing loose stools with faecal matter one or two times a day.

Minimal :—Slight remission (passing loose stools more than 3 to 4 times a day.

Uuchanged :—No change from the pre-treatment status

Worse :—Increase in symptoms.

After 4 days treatment, the children were brought to the subcentre again and the improvement was assessed by clinical examination and stools examination. The results are shown in Table VI.

The clinical improvement of the gastro enteritis with respect to the bacteriological organisms is given in the following table.

TABLE VI

Showing the improvement after 4 days of treatment

Age group	No. of children	Improvement on the 5th day	
		Improved	Not improved
0–2 yrs	61	50 (81·9%)	11 18·3%
Above 2 yrs	33	29 (87·8%)	5 (15·1%)

TABLE VII

Organisms grown	No. of cases	Improved	Not improved
1 E. coli	34	21 (61·7%)	13 (38·4%)
2 Klebsiella	10	6 (60·0%)	4 (40·0%)
3 Enterobacter	11	7 (63·0%)	4 (37 0%)
4 Gram-ve cocci	9	2 (22·2%)	7 (77·8%)
5 Enterococci	4	4 (100%)	—
6 Candida	3	3 (100%)	—
7 No. growth	23	23 (100)%	—

Discussion.—From this study it can be observed that out of 94 children, 62 were males and 32 females. Sixty one children belonged to 0–2 years of age group and 33 were above 2 year age group. Fifty eight children had diarrhoea of grade I, 22 of grade II and 14 of grade III. Ten children had grade II vomiting. Stool examination of children in our study, revealed that 64·9%

of the children had bacterial infection. Stool smear may or may not be significant. But as a routine before giving the anti-bacterial preparation to the child, stool examination was carried out and the findings were noted.

10·7% had bacterial infection along with various worm infestations, 10·6% had giardiasis; 6·4% had worm infestations alone 4·3% had trichomonas and 3 2% had E. H Similar findings were observed by other authors also[1, 3]. Stool culture report showed that E. coli as the predominant organism (36 2%) causing diarrhoea in children as others observed [1, 2, 3, 4, 5]. In a study done in the Institute of Child Health and Hospital for Children, Egmore, Dr. B. R. Santhanakrishnan, *et al*[2] only one case of shigellosis was found out of 300 children. In this study also there was not even a single case of shigellosis as against the findings of S. Gupta *et al*[1] who have noticed 26 8% of shigellosis. S. Gupta *et al*[1] have observed a fair response to Framycetin sulphate after 48 hours and 100% response after 72 hours. In our study the response after 48 hours was not very significant. But after 4 days treatment clinical improvement was noted in 81·9% of children below 2 years and 87·8% above 2 years. There were no side effects noted to the drug and this being a non-toxic drug with 80% efficacy in infective diarrhoeal cases, this drug can be safely recommended to children.

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RH ISOIMMUNISATION DURING PREGNANCY ANTENATAL PROPHYLAXIS

Of 3 533 Rh-negative women who began a pregnancy without detectable Rh antibodies, 62 (1·8%) showed evidence of Rh isoimmunisation during pregnancy or within three days after delivery. All denied transfusions as well as abortions or previous pregnancies not followed by the administration of Rh immune globulin. Rh isoimmunisation during pregnancy or within three days after delivery, which will not be prevented by the administration of Rh immune globulin after delivery, is the most important cause of residual Rh isoimmunisation. A clinical trial of antenatal administration of Rh immune globulin, initially at 34 weeks and subsequently at 28 and 34 weeks' gestation, in 1.357 Rh negative pregnant women who had Rh-positive babies was effective in preventing Rh isoimmunisation during pregnancy or within three days after delivery. Antenatal prophylaxis with Rh immune globulin will be necessary if the incidence of Rh isoimmunisation is to be reduced to its lowest possible level.—(*J.A.M.A.*, 22-9-1978).

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INTRAVENOUS *DOXYCYCLINE* IN RESPIRATORY, POST-SURGICAL AND SOFT TISSUE INFECTIONS*

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INTRODUCTION :—Doxycycline is a broad spectrum antibiotic with an antibacterial spectrum similar to other available tetracyclines. However, it has an advantage over the latter in that it has a convenient single daily dose regime because of its long half-life and absorption not affected by dairy products (sic). It's half-life is not prolonged in uræmic patients and it can thus be used in renal failure unlike other tetracyclines[2,3].

Intravenous Doxycycline has also a convenient single daily dose schedule and could be very useful in severe bacterial infections. It could be an useful drug in severe infections where one would like adequate drug levels in the blood as quickly as possible, or when oral medication is not feasible. This paper contains an evaluation of the value of intravenously administered doxycycline in a variety of infections.

Material and methods.—A total of forty-five patients were studied on an in-patient basis. Table I shows the number of patients with various infections. Thirty-nine were males and six females. The age group ranged from 11 to 70 years. All the patients selected received antibiotics for at least 3 days prior to the study. They all underwent detailed clinical evaluation. Initial investigations included a hæmogram, ESR, urine examination, blood urea, s. creatinine and SGOT. Relevant material for bacteriology inclusive of culture and sensitivity was sent. Additional investigations like X-ray chest and plain X-ray abdomen were done as required.

TABLE I

Showing the no. of patients in various groups

Disease		No. of patients
Medical :		
Pneumonia	...	11
Lung abscess	...	1
Empyema	...	1
Lower resp. tract infections	...	15
Surgical Post-operative :		
Abdominal sepsis	...	3
Appendicular sepsis	...	3
Soft tissue infections	...	11

Doxycycline was administered by slow intravenous injection undiluted in a dose of 100mg. bid on the first day and 100mg. daily subsequently. The administration of the drug was continued depending on individual needs for a period varying from 4—38 days. All the investigations done initially before starting doxycycline were repeated at weekly intervals following the therapy to evaluate organ toxicity. All patients were examined daily to evaluate response to therapy and were carefully monitored for any side effects.

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*Specially contributed to the 'ANTISEPTIC'.

Results :—The results of treatment were evaluated as (*a*) good, (*b*) satisfactory or (*c*) poor according to criteria shown in Table II. Table III shows the results of the study. Of 11 patients with pneumonia 9 had good response while one had a satisfactory response and one patient responded poorly. The one with the poor response had Klebsiella pneumonia. One patient each of lung abscess and empyema also responded well. Of 15 patients with lower respiratory infections, 7 showed good response, 3 had a satisfactory response and two had a poor response. One of the patients with poor response had Klebsiella infection. In three patients the drug could not be continued because of the side reactions. In the surgical group of 17, 8 showed good response, 5 satisfactory and 4 poor response. Of the four with poor response, 2 had pseudomonas infection and one had intestinal perforation with severe gram negative sepsis. Thus the majority of patients who did not respond had Klebsiella or Pseudomonas infection. Table IV shows the bacterial isolates prior to treatment.

Table II

Showing the criteria of response

		Good	Satisfactory	Poor
Medical				
Lower resp. infections	WBC ESR	Normal	Controlled	No change
	Sputum	Absent	Moderate quantity	No change
	Cough	None or minimal	Controlled	No change
	Other symptoms and signs :	Absent	Controlled	No change
Pneumonia :	Sputum	Absent	Moderate	Profuse
	Cough	Absent	Moderate	Profuse
	Fever	Absent	Absent	Present
	X-ray	Complete resolution	Delayed resolution	Incomplete resolution or complications like empyema or abscess
Surgical:				
Soft tissue wound infections		Healed healthy	Incomplete healing	No healing
	Other evidence of infections like elevated ESR & WBC	Absent	Mild	Present

No significant side effects were observed. There was no evidence of hæmatological, hepatic or renal toxicity. Though local pain at the site of injection was often complained of none of the patients had thrombophlebitis. Three patients developed moderate to severe anaphylactic reaction during the study. All the patients were of bronchial asthma with lower respiratory tract infections. Later all did well on a different antibiotic regime. All these patients developed reaction at the same time on the same day. Incidentally, all were unfortunately given the drug by the same syringe. It is thought unlikely that three patients at the same time would get drug reaction as a coincidence. The side reaction was thought to be due to inadequately cleaned, contaminated syringe rather than due to the drug. None of the other patients developed any allergic reaction.

TABLE III

Showing the response to doxycycline

Diagnosis	No. of patients	Results		
		Good	Satisfactory	Poor
Medical group				
(*a*) Pneumonia	11	9	1	1
(*b*) Lung abscess	1	—	—	1
(*c*) Empyema	1	1	—	—
(*d*) Lower respiratory tract infections	15	7	3	2
Surgical group				
1. Post-operative				
(*a*) Abdominal sepsis	3	—	1	2
(*b*) Appendicular sepsis	3	2	1	—
2. Soft tissue infections	11	5	3	2

TABLE IV

Showing the bacteriology prior to treatment

Organisms		No. of patients
Staphylococci	...	3
Klebsiella	...	2
Mixed infections	...	31
Total No. of patients	...	**36**

Discussion.—Intravenous doxycycline administered in a single daily dose of 100 mg. was effective in common bacterial infections. In lobar pneumonia 10 out of 11 patients responded. One patient with pneumonia who did not respond had Klebsiella infection. Two patients with empyema and lung abscess, both relatively severe infections, did well. Of the 15 patients with lower respiratory infections three developed side reactions due to contaminated syringe. Ten patients responded well. Of the two patients with bronchiectasis who did not respond, one had Klebsiella infection and the other staphylococci with pneumococci. Thus, out of a total of 23 patients with various types of respiratory infections only three did not do well and majority of these had Klebsiella infection. The experience of other investigators with doxycycline in respiratory infections has been comparable.[5, 6]

In the post-operative abdominal sepsis, two out of three patients did not respond. One of these had intestinal obstruction with fæcal fistula and the organism responsible was Pseudomonas. The second patient who did not respond had intestinal perforation with gram negative sepsis. Intravenous doxycycline has been found to be effective in post-operative sepsis from 74·4% to 82·7% of patients by other investigators.[7, 8] A total of 9 out of 11 patients with soft tissue infections responded well. Two who did not respond had uncontrolled diabetes with gangrene and had mixed infection. No major side effects were observed. Mild pain at the site of injection occurred in a few patients but no thrombophlebitis was observed. No organ side effects hæmatological, renal or hepatic were observed.

Doxycycline has been found to be safe and well tolerated in a large number of other studies. Intravenous doxycycline has been thus found to be effective in various common infections. It is safe and well tolerated and has a very convenient single dose daily regime.

Conclusions.—Intravenous doxycycline was found to be effective in various common bacterial infections, like pneumonia, lower respiratory infections and soft tissue sepsis. Doxycycline can be conveniently administered directly intravenously in a single daily dosage. No significant side effects were observed.

Acknowledgement.—We thank M/s. Gufic Lab. for the liberal supply of parenteral Doxycycline (Leen).

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DINITROCHLOROBENZENE THERAPY FOR ALOPECIA AREATA

Ninety patients with alopecia areata were treated with weekly applications to one side of the head of dinitrochlorobenzene (DNCB) dissolved in acetone, the other side of the head serving as control region. In 80 patients (89%) hair regrew either exclusively on the treated side or considerably faster and denser on this side. The difference was noted, in the majority of cases, within eight weeks. The initial response, however, could not be maintained in all patients. Persistent response was observed in 72 patients (80%). Peribulbar round cell infiltrates were more constant and denser on the treated side, suggesting that topically applied DNCB affects the peribulbar infiltrate present in alopecia areata. Possibly, the therapeutic result is due to altered local immunoregulation.—(*J.A.M.A.*, 1st Dec. 1978).

Question.—Is a prolapsed iris a common complication of a cataract operation ? What is the treatment ?

Answer. – Iris prolapse used to be a frequent complication of cataract surgery before good ophthalmic suture materials were introduced. To-day the corneoscleral wound is closed with direct sutures 8/0 silk or 10/0 nylon, using at least three and more usually five or even more sutures. With proper closure spontaneous iris prolapse can be considered eliminated, but it does occasionally occur due to an external force on the eye or to raised intraocular pressure. A small iris prolapse may be repositioned under anæsthetic and the wound resutured.—(*B.M. Journal*, 23rd Sep. 1978).

NON-PULMONARY TUBERCULOSIS*

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PART I.

IMMUNOLOGY :—According to the World Health Organisation, there are 10 to 12 million subjects with active pulmonary tuberculosis in the world and they will be infecting 50–100 million people every year. Three million deaths occur annually due to this disease.

Pulmonary tuberculosis has been studied in respect of epidemiology, clinical behaviour, diagnosis and management with various regimens of chemotherapy. It is now proposed to discuss non-pulmonary tuberculosis, outlining some of the problems in its clinical recognition, diagnosis and management.

There are no satisfactory data available in respect of the prevalence of non-pulmonary tuberculosis. In a hospital studys from Kanpur (1972) of 1183 cases of non-pulmonary tuberculosis the breakup revealed 698 cases to be of lymph nodal disease, followed in frequency, by genital tuberculosis. Bone, skin and G. I. tract tuberculosis, constitute the less frequent forms of disease.

The prevalence rate of non-pulmonary tuberculosis in relation to pulmonary tuberculosis in Government General Hospital, Madras, is roughly 1 : 10. However, the assessment of the incidence of organ involvement of non-pulmonary tuberculosis is often variable, depending on the interest of the Institution or the Physician concerned It can be said, that the incidence of non-pulmonary tuberculosis is closely related to that of pulmonary tuberculosis and with a decrease of prevalence of the latter, the incidence of the former may also decrease.

Briefly, tubercle bacilli can be divided into five types (*a*) Human, (*b*) Bovine, (*c*) Murine, (*d*) Avian, (*e*) Cold blooded, depending upon its species affection. However, there is no strict species specificity. A group named atypical mycobacteria now called "tuberculoid bacilli" also cause disease in 2–5%[1, 2, 3], of cases initially diagnosed as pulmonary tuberculosis.

The seeding of tubercle bacilli after entry into the human host by inhalation into the lung and thereafter dissemination to various organs with the first infection is familiar. The route of entry may also be the gastro-intestinal tract.

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*Based on series of three University of Madras endowment lectures delivered by Prof. K.V. Thiruvengadam, under the auspices of Tamil Nadu T.B. Association.

*Specially contributed to the 'ANTISEPTIC'.

Wallgren (1948)[4] in his article "The time table of tuberculosis" has observed the sequence of occurrence of clinical disease in individual organs after the first infection. The first manifestation of illness occurs at about 3 to 6 weeks after the infection, presenting in children as a febrile episode, and in adults as erythema nodosum, raised ESR (etc). The next event is the occurrence of T. B. meningitis after 2—3 months of infection and disease of the pleura after another few months. Manifestation of pulmonary tuberculosis is in terms of years after the first infection. In Wallgren's series in between one and two years after primary infection, bone involvement occurred. Though, this may generally be true in untreated, children, this cannot be applied in all cases, especially, in adults, since various factors such as the host-parasite relationship come into play. The idea in Wallgren's time table is to emphasise, that there is some degree of predictability of organ involvement, at least in some measure if not in the exact point of time, and sequence of occurrence.

Immunologic mechanism.–Both humoral and cellular immune responses are operative in tuberculosis. Though Ig-A is often increased in patients with active tuberculosis and drops once the infection is controlled, the role of humoral immunity is not clear. However cellular immunity, mediated by lymphocytes is well established.

The sequence of antigen-lymphocyte-macrophage interaction is not clear. Tissue hypersensitivity, as manifested by tuberculin reaction in the skin, in the Mantoux test and cellular immunity, as manifested by containment of infections, mediated by specific 'T' lymphocytes and macrophages, do not always parallel.[5, 6]

Freedman (1972)[7] has suggested a hypothesis to explain this lack of correlation. (Figure I). Central to this concept, is, that mycobacterium tuberculosis has two antigens, 'P' (Protein) antigen and 'C' (Carbohydrate) antigen. The 'P' antigen stimulates the plasma cell and also the committed 'T' lymphocyte. However the anti-P antibodies do not protect either the host or the bacilli. The proliferation of committed lymphocytes results in the hypersensitivity as manifested by tuberculin test and the activation of macrophage and phagocytosis of tubercle bacilli, by the macrophage.

The 'C' antigen reactivity is genetically determined. In other words, in those who are genetically susceptible, as in ethnic groups like negroes and the population of developing countries, it produces an anti-C antibody which protects the bacilli from the host defence. Hence, the macrophage is not able to get at the bacillus and thus infection occurs. This theory is based on the premise that the anti-C-antibodies will not interfere with the hypersensitivity role of the committed 'T' Cell, thus providing for the separation of allergy from immunity.

Briefly, it could be said, that a positive tuberculin test tells us that the tubercle bacillus has entered the host and has evoked an immune response. It does not tell us, that active disease is present. One can infer, that the individual with positivity may have protection against tuberculous infection. However, immunity and tuberculin positivity do not run parallel to each other.

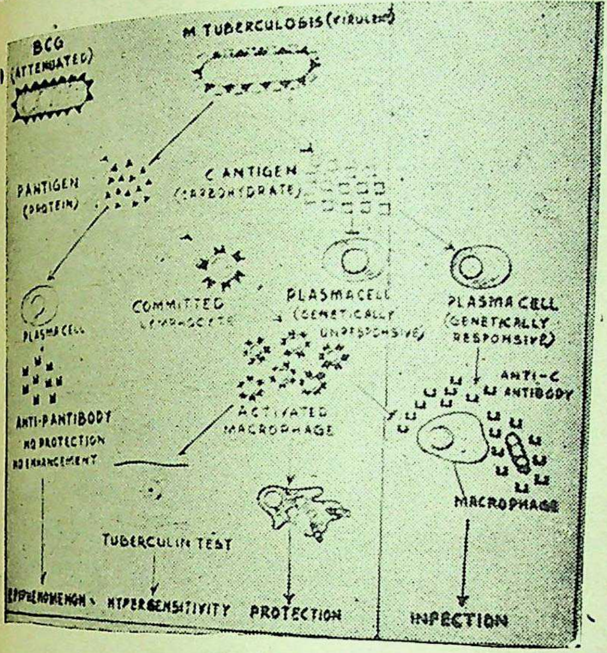
BCG (ATTENUATED)
M TUBERCULOSIS (VIRULENT)
P ANTIGEN (PROTEIN)
C ANTIGEN (CARBOHYDRATE)
PLASMACELL
COMMITTED LYMPHOCYTE
PLASMACELL (GENETICALLY UNRESPONSIVE)
PLASMA CELL (GENETICALLY RESPONSIVE)
ANTI-C ANTIBODY
ANTI-P ANTIBODY
NO PROTECTION
NO ENHANCEMENT
ACTIVATED MACROPHAGE
MACROPHAGE
TUBERCULIN TEST
EPIPHENOMENON
HYPERSENSITIVITY
PROTECTION
INFECTION

FIG. I.

As a proof of this, we can site a few examples. In a survey called Prophet survey in England, it was found that 85% who were surveyed with positive tuberculin reaction when followed over a period of time did not develop active disease. Those who were tuberculin negative were vulnerable to tuberculosis indicating, that together with hypersensitivity, there was certain immunity beneficial to the host.

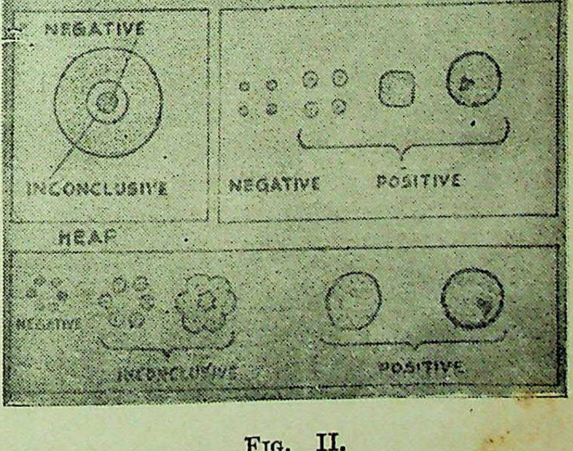
MANTOUX
NEGATIVE
INCONCLUSIVE
TINE
NEGATIVE
POSITIVE
HEAF
NEGATIVE
INCONCLUSIVE
POSITIVE

FIG. II.

However, this is not always true. If one takes the Western World where the vast majority of the population have not been exposed to tuberculosis and therefore tuberculin negative, those who are found to be positive on followup are found to have dangerous or difficult forms of the disease. On the other hand, those who have a negative reaction to tuberculin test have been found to have the least difficult forms of the disease.9, 10

In our country, with a heavily infected environment where the vast majority are tuberculin positive, tuberculin negativity is not a protection against infection, because it implies greater vulnerability to develop tuberculosis, indicating that delayed hypersensitivity and immunity do not go hand in hand.

One can desensitise a person to tuberculo-protein and render a positive tuberculin test, negative. But, still the person may have resistance to tuberculosis, further demonstrating this lack of parallelism between immunity and hypersensitivity.

As a measurement of resistance to tuberculosis Strom[11] introduced a radio active labelled BCG test and showed that those who had resistance were able to halt the progress or delay the spread of BCG from the site of infection.

The pathologic response to infection depends on two factors. The mass of antigen (the seed) and the tissue response (the soil). On further elaboration of this concept of seed and soil, with small bacillary load in a host with a well established lymphocyte response, tubercle formation is seen. Moderate bacillary load with moderate lymphocyte response produces the familiar caseation, fibrosis, calcification etc. With a heavy bacillary load and with poor cellular response one finds miliary disease and widespread fulminating forms of the disease occurring. This partly explains the various manifestations of tuberculosis in different individuals.[12]

Since the histopathologic response is determined by local factors, quite different patterns may occur in the same individual and even in different parts of the same lesion, and being immunological, the histo-pathologic changes are not specific for tuberculosis alone. Cellular hypersensitivity is highly specific, but cellular immunity is not so.[13, 14]

Lastly, as observed by Koch himself, the tubercle bacilli may remain dormant inside the macrophage for years and later get reactivated. This explain the persistence of tuberculin positivity for a long time after a primary infection.

Summing up, immunity in human tuberculosis is never high or complete. This can be broken down by a variety of adverse influences such as repeated exposure, fatigue, malnutrition etc., what Dubos[15] called "Physiologic misery".

Tuberculin testing.—The tuberculin response is considered positive if the response to intermediate strength P. P. D. is 10 mm. or more. Old tuberculin will give more false negative results. When Koch's phenomenon is seen, that is, where there is a brisk local reaction with an induration of 15 mm. or more systemic manifestations such as fever and focal manifestations in the affected organ following tuberculin testing, is a pointer to be tuberculous nature of the disease process (Fig. II).

There are many reasons for false negative tuberculin reaction. It may be due to faulty technique, such as when old deteriorated test material is used or when too deep an injection is made or due to leakage of tuberculin while injecting. It must be negative when other diseases co-exist, such as disseminated tuberculosis, measles, sarcoidosis and lymphoma or Hodgkins disease. It may be falsely negative when a person has been recently vaccinated against measles, poliomyelitis or yellow fever. Lastly when immunosuppressive drugs are being used it may be negative.

So, the tuberculin test only tells us that an individual with a positive reaction has at sometimes had contact with tubercle bacillus. A positive test is not in itself diagnostic of active infection.

Tuberculous pleural effusion.—The number of patients with tuberculous pleural effusion and who were admitted to the Government General Hospital, Madras were 131, 144 and 95 out of total medical admissions of 23,071, 21,168 and 19,834 in 1975, 1976 and 1977 (0·57, 0·68 and 0·48 percent) respectively of the total admissions in the medical wards). However, these data do not reflect the incidence of pleural effusions in the community at large. Apart from the fact that middle and higher income groups may not be represented properly in a hospital study, the illness may pass on to a stage of pleural thickening without recognition of the effusion in the acute stage.

The incidence of pleural effusions in an autopsy series of patients with parenchymal pulmonary tuberculosis varies from 8 to 80%. The low figure of 8% put forward by Udani may be due to the fact that his study has been in a children's hospital, and as is well known, pleural effusions are uncommon in children.

The etiology of the pleural effusion in 100 patients with pleural effusion was studied by us in 1962.[1] Tuberculosis was established as the cause of the effusion in 35 7% of patients below 40 years of age and in 31·1% of patients above 40 years. In other words, even in the older subject with pleural effusion, tuberculosis has to be considered, apart from malignancy. The tuberculin response is usually brisk in patients with tuberculous pleural effusion. Years ago, one observer had pointed out that in the initial stages of an effusion, the tuberculin response may be negative and subsequently may become positive. Dr. Shankar Rau[2] has correlated the occurrence of the tuberculin response with the lymphocyte count in the peripheral blood and in the pleural fluid. The study shows a dissociation between the cutaneous and systemic responses. Some anatomical facts are worth recalling in relation to pleural disease.

Branches of the bronchial artery provide the main supply to the visceral pleura, but a few branches of the pulmonary artery supply the deepest part of the visceral pleura. The parietal pleura is exclusively supplied by the systemic arteries. Because of this anatomical fact, the bacilli may get seeded into the pleura by a systemic hematogenous dissemination of the bacillus. This involves a brisk pleural response with an exudative outpouring, at a time, when there is no obvious disease in the underlying lung. One other fact is worth remembering. The pleura is separated into parietal and visceral layers due to an invagination of the lung-bud into the pleural sac, which is a single membrane. The two layers are therefore in continuation at the mediastinum. Hence, pathological changes in the punch biopsy of the parietal pleural could reflect changes under the visceral pleura.

The pleural space and the fluid within it are not under static conditions. A constant, dynamic flow of fluid into and out of the pleural space is dictated by the hydrostatic pressure in the pleural capillaries, the colloid osmotic pressure of plasma and the intrapleural negativity. The various forces are depicted in Fig. III.

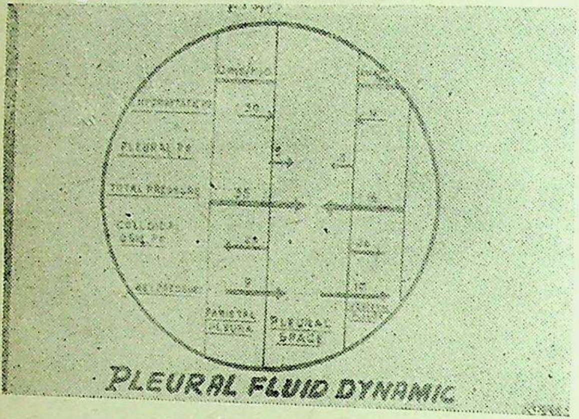

FIG. III

The pressure tending to force the fluid into the pleural space is 9 cm. H_2O whereas the pressure tending to absorb the fluid is 10 cm. H_2O. Therefore, there is always a dynamic equilibrium as a consequence of which the force moving the fluid away from the pleural cavity is greater, so that only a thin film of fluid remains in the pleural space. However, in situations where inflammatory processes operate, the main factor is increased capillary permeability which enables the outpouring of protein rich fluid into the pleural cavity. In hydrothorax the main factor is the increased capillary hydrostatic pressure alone.

The salient clinical features of idiopathic pleural effusion, which we know is practically always of a tuberculous nature in the young, are fever and chest pain, aggravated by inspiration and cough. It is not often emphasised that many of these patients may appear toxic. In one series of 200 patients, 14 had a toxic appearance and clinicians dealing with them were led to believe that they were dealing with pneumonia. In other words, a toxic appearance may be deceptive in the initial phase of the illness. Shortness of breath is another symptom. It is worth noting that if a patient has dyspnoea out of proportion to the amount of fluid which is clinically or radiologically demonstrable, one has to search for someother cause. The cause may be endobronchial obstruction causing defects of ventilation and perfusion in the underlying lung before it has collapsed fully. Therefore, it is necessary to be careful in assessing the degree of dyspnoea in a patient with pleural effusion. Lastly, cough could occur in a patient with pleural effusion. It is said that those who have parenchymal tuberculous disease my have cough and sputum and a positive tuberculin reaction. Those who do not have any parenchymal lesion, atleast initially, have a negative tuberculin reaction and little or no cough. It is advisable to examine the sputum for tubercle bacilli and if tubercle bacilli are demonstrable in the sputum, a pleural biopsy may not be necessary.

Radiologically, a pleural effusion shows a classic curvilinear upper margin of the fluid. In 1963, Davis^4 and his colleagues have produced physical, experimental and clinical evidence to suggest that the upper limit of a free pleural effusion is not S shaped but is, in fact, horizontal. The curve upwards occurs, because of the greatest depth of fluid in the axilla.

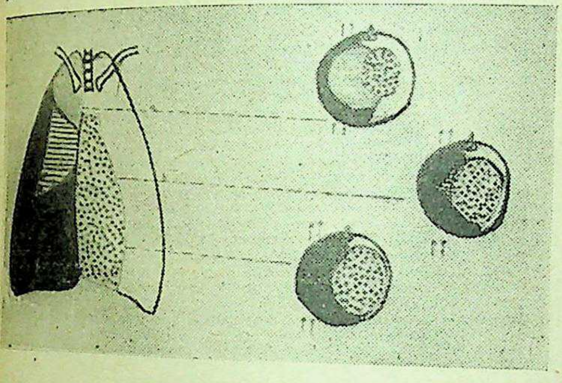

FIG. IV

The diagram (Fig. IV) shows the fluid in the pleural space covering the relaxed lung and cross-sections of the chest at different levels. In Fig. A the X-ray has to traverse a thin layer of fluid in front of and behind almost normally aerated lung and hence this area appears almost radiolucent like normal lung. In C the beam passes through a homogenous medium of fluid only. As a result, if a needle is introduced into the pleural space above the apparent level of the fluid one may still be able to draw fluid. In other words, the upper level is not oblique or curvilinear but is indeed more or less horizontal.

A vexing problem to the clinician is the question of elicitability of shifting dullness in a pleural effusion. The standard answer is that fluid in the pleural space never shifts as long as there is only fluid. If there is air and fluid however, shift in dullness may be elicited. We performed a study on a patient with a moderate sized pleural effusion. The fluid level was determined in the chest film in the erect posture. Then the patient was put in the lateral decubitus position on the side opposite to the effusion. 15 minutes later, there was considerable reduction in the upper level of the effusion. If we could repeat the study with a smaller bulk of fluid we may possibly demonstrate more shift. The obvious fact is, that the entire fluid may not shift and care is necessary in marking the upper limit of dullness. Nevertheless, it would not shift as easily as fluid in a hydropneumothorax would.

Considerable work has been done in the study of pleural fluid and information has been gathered from the point of view of biochemistry, cytology etc. Ordinarily, the protein content^5 of tuberculous pleural fluid is raised but this has to be correlated with plasma protein levels. Normally it should be 0·5 times or greater than plasma[6] protein level, in order that it may be deemed significant. Likewise, pleural fluid glucose[7] has to be compared with plasma glucose levels : lower values than plasma occur not only in tuberculous pleural effusion but also in a few other conditions. One such is rheumatoid arthritis with pleural effusion. This could be differentiated from tuberculous pleurisy by the fact that intravenous infusion of glucose raises pleural fluid sugar in tuberculous effusion but not in rheumatoid pleural effusion.

In a young woman with vague joint pains associated with pleural effusion, low complement levels in pleural fluid suggests systemic lupus erythematosus.[9] Rheumatoid factor in the pleural fluid, though of some help is not specific for the diagnosis of rheumatoid arthritis.

A leucocyte count in the pleural fluid less than 100/cumm. indicates a transudate, more than 20,000 cumm. favours an empyema while values between 1000 and 10,000/cumm. indicates a tuberculosis effusion.

Examination of the fluid in a case with effusion must be with a view to get maximum information. Clinically, of course, one has to look for telltale evidence of tuberculous disease like cervical lymphadenitis, biopsy scar of tuberculous lymph nodes in the neck etc. No examination of a pleural effusion is complete without taking post-aspiration chest X-rays.

If a considerable number of eosinophils are seen in the pleural fluid it may reflect only contamination with blood. On the other hand, if there is peripheral blood and pleural fluid eosinophilia, one could consider polyarteritis nodosa, various forms of pulmonary eosinophilia and so on. These points may help to differentiate these from the commoner tuberculous pleural effusion.

LDH is raised above 200 units/ml. in exudates[9] and again this has to be compared with serum levels. Another useful pointer in pleural disease is the pH of the pleural fluid.[10] Pleural fluid acidosis indicates a tendency for loculation of fluid or empyema formation and may indicate the need for intercostal tube drainage. This fact is all the more true for para-pneumonic effusions. The cholesterol content may be elevated in pleural effusions which have existed for some time. It does not necessarily mean that the patient has myxoedema with pleural effusion. In certain situations like pleural mesothelioma, the hyaluronic acid content[12] of pleural fluid is elevated. Mesothelial cells are decreased in tuberculous pleural fluid[13] but this is not an uniform finding.

It is always good not to take things for granted in medicine and to attack each problem on its own merits. I recall here the case of a school master who was treated as tuberculous pleural effusion prior to admission in the hospital. Because of an inexhaustible pleural effusion and because the lung would not re-expand after aspiration, it did not look like a simple tuberculous pleural effusion though treatment with anti-TB drugs was given for a few months. Later the axillary lymph node biopsy revealed an adenocarcinomatous deposit.

Abram's punch biopsy needle has been used by us for years and one can get a good bit of tissue for histopathological examination.[1, 14] Biopsy of the pleura in a tuberculous effusion may reveal subpleural caseating tubercules. However a non-specific inflammatory reaction may be the only histological finding. In India, tuberculosis can be confidently diagnosed from such a histologic picture. However, in endemic areas, fungal infections like histoplasmosis have to be ruled out. In such areas one has to demonstrate the organism (Mycobacterium) in the biopsy specimen in order to be sure of the diagnosis. Atypical mycobacteria which are called "tuberculoid" bacilli may become a bugbear in future in pleuro-pulmonary disease.

Occasionally when clinical methods fail, echography may be useful in locating pockets of pleural fluid especially in an organising effusion.[15] The tuberculin response is not very useful in the diagnosis unless we get a brisk local, focal and general reaction. Finally, in managing pleural effusions, Menon[16] found that the rate of absorption of fluid was quicker with oral or intrapleural steroids than with intrapleural streptomycin alone. In other words, if steroids are added orally or intrapleurally, the resolution of the effusion was faster. In the next study he showed that oral steroids were better than intrapleural steroids and this obviated paracentesis in both schedules of treatment, so that when we consider serous membrane tuberculosis, steroids will be of help in earlier and fuller resolution.

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[To be Continued]

GRANULOMA MULTIFORME

(A Case Report)

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INTRODUCTION:—Granuloma multiforme, a rare disorder has been described by Leiker in 1964, as "a new skin disease resembling leprosy"[3]. Though endemic in Nigeria it is also reported in Kenya, Congo, usually limited to Central Africa[6]. It is also known as "Mkar disease".

Clinically and histopathologically there is close similarity between this condition and tuberculoid Hansen. It starts as pruritic papules which slowly enlarge into an annular lesion with a raised firm papular margin. Irregular extension may lead to geographic patterns. The cleared centre may show hyper or hypopigmentation. There is no structural or functional impairment of the nerves not associated with any systemic manifestation. The condition occurs commonly in females and is not found in children.[1, 2, 3]

The nature of the disease is not known. That it is a variant of "Granuloma annulare" or a reaction to some agents falling from the roof of the houses, or an entirely new entity of unknown origin, are some of the views advanced about the disease. A search for the cause is usually futile though some have demonstrated filarial larva.

Histopathology.—Characterised by granuloma scattered in the dermis. The granuloma occurs around an area of degeneration of elastica. A granuloma is made of histiocytes, lymphocytes, epitheloid cells and giant cells. The degeneration of the elastic tissue is the early event.[6]

TREATMENT:—No specific treatment is available. Spontaneous resolution usually occurs in a month or years. Dapsone is not effective.

Case report.—Mr. P. a 26 year male presented with skin lesions of 6 months' duration. The lesion started an itchy papule and there was slow extension in size and number. Examination revealed annular lesions of varying size and shape of 1—6 cms. distributed over the upper back, proximal part of the upper extremity. The edge of the lesion was smooth and firm. The cleared centre was hyperpigmented. At no time did the patient have systemic symptoms. There was no history of aggravation by any drugs or climatic changes. His parents and siblings are normal. Hair, nail, mucous membrance.—Normal.

C.V.S., R.S., Abdomen =No significant findings.

Investigations.—Scraping for fungus—negative; Skin clipping for AFB—negative; T.C.-6200/c.mm.; D.C.—P 70; L 28: E 2:; E.S.R.—½ hr. 8 mm.; 1 hr. 16 mm.; Mantoux test–negative; Blood VDRL — non-reactive.

Biopsy :—Under H and E stain the epidermis was found to be normal, with a focal demogenisation of collagen with surrounding inflammatory infiltrate of lymphoid cells eosinophils and few giant cells of foreign body type. Elastic stain revealed fragmentation of elastic fibres. AFB stain failed to demonstrate any organism. PAS stain revealed no fungus.

Discussion.—With the presenting clinical and histopathological findings, the diagnosis of "Granuloma multiforme" was made. Tuberculoid hansen was ruled out due to the lack of involvement

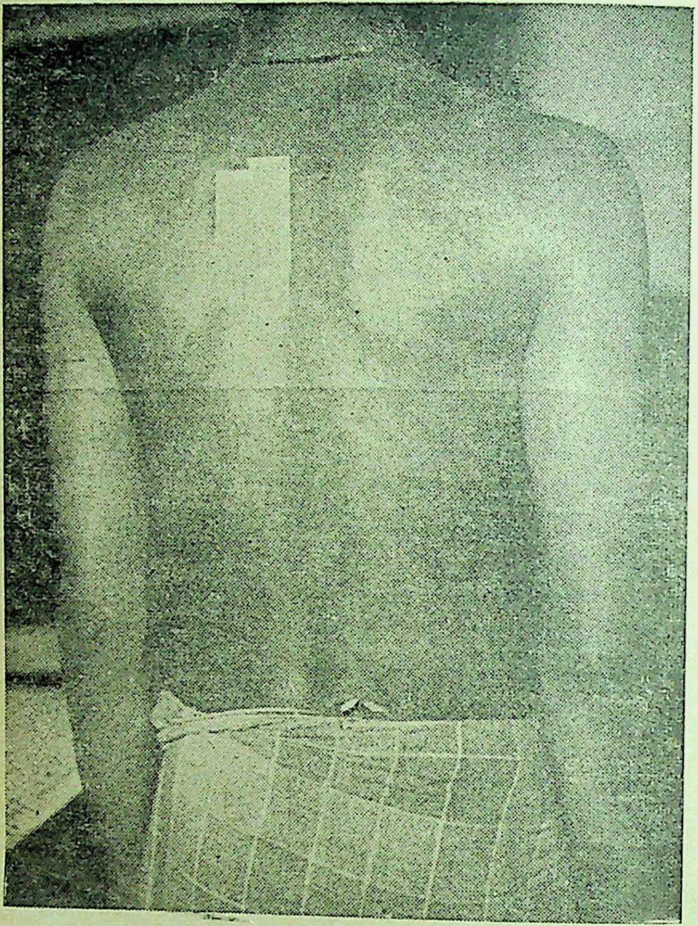

FIG I Picture shows annular lesions with raised well defined margins.

FIG. II. Pictures shows granuloma in the dermis made histio-cytes and lymphocytes.

of nerves and absence of epitheloid cell granuloma in the biopsy. The other possibility of "Erythema annulare centrifugum" of Darier was ruled out by the absence of erythema and scaling in the morphology and by the absence of plasma cell coatsleeving around the blood vessels on biopsy. The granuloma annulare differs from granuloma multiforme in its age of onset distribution, evolution and histopathology which will show a palisading granuloma. Annular sarcoid will show a typical naked tuberculoid granuloma in histopathology.

Summary.—A case of granuloma multiforme is presented for its rarity. Though the definite cause is not known, it is characterised initially by damage to the elastic fibres followed by granulomatous infiltrate.[6] Present knowledge of pathogenesis of granuloma annulare suggests that this may be a presentation of Tcell immunity to an unknown antigen, the initial degeneration of elastics and collagen may due to release of enzemes from the primed lymphocytes or macrophages.[4,5] An immunological study may enlighten us on the pathogenesis of this disorder.

Acknowledgement.—We thank the Dean, Tirunelveli Medical College, Tirunelveli for permitting us to publish the report.

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CYTOLOGICAL EXAMINATION OF NIPPLE DISCHARGE

Q. George Crille, Jr. M.D., recently stated in Hospital Medicine (14·82 87—88, July 1978) that any kind of nipple discharge should undergo cytological investigation. Other reports claim that such testing is unnecessary because of the extremely low yield of abnormal pathology results. Since physicians are being urged to minimize unnecessary laboratory tests, I would appreciate your consultant's opinion.

A. Cytological Examination is a valuable diagnostic aid in the evaluation of nipple discharge and it should be a routine part of the examination. However, like other aids it is not perfect.

In our patients with a watery, yellow, pink or bloody discharge, 13·5% had cancers and 27·4% had atypical changes on histological examination. Obviously, patients with one of these discharges should still have a biopsy despite normal cytological findings and mammograms and lack of a palpable mass. A mastectomy should never be performed on the basis of abnormal cytological findings.

I agree with Dr. Crile that cytological examination of nipple discharge is valuable, and I do not agree with the statement attributed to unquoted authors that it is unnecessary, that the yield is extremely, low and that the test is almost certainly not likely to be productive. Its realiability depends on the deligence and training of the cytologist and on the technique of preparing the smear. Like other tests one must recognise its limitations but not disregard its advantages.—(*J.A.M.A.*. 19-1-1979).

INFANTILE PYLORIC STENOSIS

(A Case Report)

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INTRODUCTION:—Infantile or congenital hypertrophic pyloric stenosis is a well documented but poorly understood disease since its first accurate description by Major in 1885. However, it is strikingly more common in first born male babies. (Ladd, 1946). The aetiology of circular muscle hypertrophy of pylorus is still obscure. Ramstedt's pyloro-myotomy is an effective method of treatment. This case report illustrates this fact.

CASE REPORT:—N. S. a 3 weeks old first born female baby was admitted on 23-6-1976 with the history of vomiting of 15 days' duration. She was healthy and of normal weight at birth. The baby started having occasional vomiting and was losing weight. Vomiting gradually became explosive. The vomitus was never bilious. There was no change in normal appetite; in fact the baby wanted more feeds after vomiting.

She was anæmic (Hb. 10 gm%). An abdominal examination revealed visible peristalsis from left to right across the epigastrium. The pyloric tumour was palpable soon after vomiting. There was no associated congenital anomaly. Barium meal studies showed gastric dilatation, greatly elongated pyloric canal "string sign" and delayed emptying time (Fig. I).

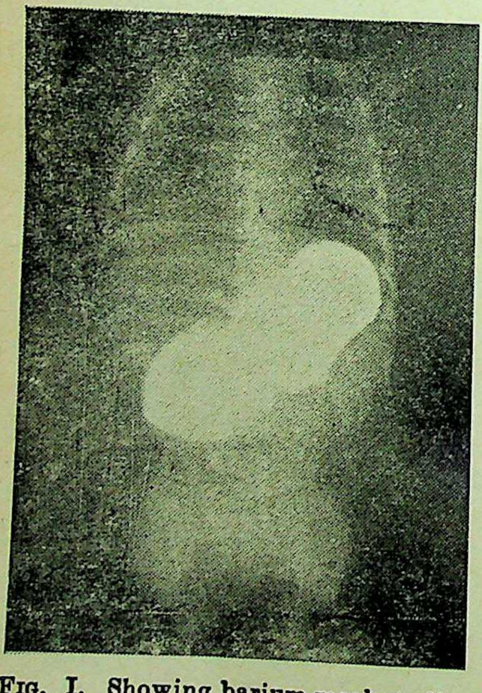

FIG. I. Showing barium meal studies before Ramstedt's Pyloromyotomy.

The baby was prepared for Ramstedt's pyloromyotomy under general anæthesia. Abdomen was opened by a right paramedian rectus muscle-splitting incision. A longitudinal incision was made in the bloodless area across the hypertrophied pylorus starting from pre-pyloric vein of Mayo to the duodenum in the serosal and muscular coats of pyloric tumour. The myotomy incision was spread by a hæmostat allowing the mucosa to bulge. The duodenum was accidentally punctured at the fornix and closed with chronic catgut. Omental patch was applied over this area for protection. Post-operatively the baby was put on penicillin, streptomycin, intravenous fluids, plasma and potassium chloride. There was no post-operative morbidity. Breast feeding was allowed from 4th post-operative day. The patient vomited once or twice during the first post-operative week. Thereafter she had shown normal weight gain and no vomiting. She was followed up for over six months at weekly intervals and no feeding difficulties were noted.

Discussion.—Congenital hypertrophic pyloric stenosis is said to be common in the first born male child (Ladd, 1952). No satisfactory explanation of this predilection is available in literature.

The incidence is 3 per thousand live births in USA (Mustard, 1966), 1 per 900 births in UK (Rickcham, 1969) extremely low in India (Ramkumar 1957). There are 35 cases reported by Fenn, (1963), 14 cases by Tahailami (1971) in Indian literature. Swan (1961) reported pyloric stenosis in African children.

The exact ætiology of the disease remains undecided. However, there are a number of theories to explain the disease process. Congenital overgrowth of the circular muscle fibres of the pylorus with reduction of pyloric lumen, delayed development of neuromuscular plexus, pyloric muscle work hypertrophy, and transmission of faulty gene are some of the theories advanced (Maingot, 1974). However, Bolding (1953) showed disintegrated cytoplasm of ganglion cells in the mesenteric plexus in case of congenital pyloric stenosis.

Management.—There is no satisfactory medical treatment for this disease. A number of surgical procedures preceding Ramstedt's pyloromyotomy included pylorectomy, gastrojejunostomy, Pietro Loveta's operation and Fredet's operation and with 50% to 100% mortality (Maingot, 1974) have been described.

In Fradet's operation, the tumour was incised longitudinally and stitched transversely. Duodenal injury during this operation if recognised and repaired at operation does not add to mortality-(Benson, 1964).

Ramstedt's pyloromyotomy is very safe and simple. Mortality is almost nil in well prepared cases.

Conclusion.—A case of congenital pyloric stenosis treated by pyloromyotomy is discussed. An early clinical diagnosis and operative treatment is mandatory to achieve successful results.

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GASTRO JEJUNO COLIC FISTULA

(Report of a Case)

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INTRODUCTION:—A 30 yrs. old man presented with persistent and disabling diarrhoea, 5 years after elective gastro-jejunostomy and vagotomy for duodenal ulcer. Barium enema studies confirmed the diagnosis of gastro jejuno colic fistula (GJCF). Elective one stage corrective surgery was successful and life saving.

CASE REPORT:—Mr. G. 30 years, an alcoholic, had symptoms of duodenal ulcer for 6 months. He underwent elective gastro-jejunostomy and vagotomy in 1973, and remained well during the next five years. In September 1978, he was again hospitalised with a history of loose motions of 3½ months' duration. Initially, he had 4 to 5 loose motions daily and soon started passing undigested rice and other foodstuff in the stool. Around the second month of illness, he once had faecal vomiting and the watery motions increased from the third month of illness, particularly immediately after each feed. The number of motions were 20 to 30 per day. He noticed marked weight loss over 2 months and oedema of both feet and legs since a month.

Clinical examination showed a cachectic, anæmic man with Bitot's spots, raw red fissured, pigmented tongue, bilateral non-tender soft pitting edema of feet and legs. Blood pressure—100/70 mm. of Hg. Abdominal examination revealed right para-median scar, but no palpable mass or organomegaly. Other systems were normal.

Investigations.—Normal urine, E. H. cysts in motion, T. C. 9,000 cell/cmm. D. C: P–60%, L–36%, E–4%, RBC: 1·4 millions/cmm, HB: 9 g%. hypochromic microcytic anæmia. Serum total proteins 4 g%—albumin 2·5 g% and globulin 1·5 g%. Serum electrolytes, urea, sugar and creatinine were in the normal range. Plain X-Ray abdomen (AP View) and chest (PA View) were normal. Ryle's tube aspiration for fecal material was twice negative. Barium enema studies revealed all the visceral components of gastro jejuno-colic fistula. Fig. I shows the barium filling up the descending colon, the splenic flexture, the left half of the transverse colon and thereafter the jejunal loops, as well as the gastro-jejunal anastomosis. Fig. II shows the gastro-jejunal anastomosis (Barium meal series).

Surgery.—Following adequate pre-operative preparation with high caloric diet, vitamins and fresh blood transfusions, the patient underwent elective laparotomy under general anæsthesia. Marked adhesions found between the abdominal wall, greater omentum and the bowel were released. The previous gastro-jejunal anastomosis was adherent to the transverse colon. A small firm mass presumably around the fistulous tract, along with the original stoma was identified. The gastro-colic omentum and lesser omentum were divided. The jejunum proximal and distal to the stoma was isolated and divided. Similarly, the transverse colon, proximal and distal to the fistula was also divided. The duodenum was clamped and cut near the first part and closed in two layers. The cut ends of the jejunum were brought together and axial anastomosis was done to restore jejunal continuity. The cut ends of transverse colon were also anastomosed for colonic continuity. The rent in the transverse mesocolon was closed. The stomach with the stoma, and the GJCF area was lifted up and resected. A Billroth II type of antecolic gastro-jejunal anastomosis was done. A side to side jejuno-jejunostomy, short circuting the g. j. anastomotic loop was done. Hemostasis was secured and wound was closed in layers. During surgery, about 700 ml. of blood and post-operatively another 350 ml. were transfused. The immediate post-operative period was uneventful. During the third week, he developed clinical and radiological features of a left sided pleural effusion. This was confirmed by paracentesis and he responded to triple anti-tuberculous drug therapy. Post-operative barium meal series done two months later, revealed normal flow of barium (Fig. II).

Discussion.—The basic requirement of any surgery to control ulcer diathesis is effective reduction of acid production. When this is not achieved, the vulnerable jejunal mucosa is exposed to acid pepsin gastric contents and the result is development of a marginal or anastomotic ulcer (Kirsner, 1971). A common cause of such ulcer include, removal of too little stomach, incomplete vagotomy, retained gastric antrum, gastro-jejunostomy without gastric resection or vagotomy, Zollinger-Ellison Syndrome, hyperparathyroidism due to functioning parathyroid tumour or adenoma or hyperplasia, and finally gastric stasis (Hardy, 1962). The marginal ulcer is a true peptic ulcer. It is likely to develop, when the afferent loop is longer and the jejunum adjacent to the stomach, is farther from the duodenum (Spiro, 1967). Its incidence after simple gastro-jejunostomy is about 20% (Spiro, 1977). **Multiple ulceration of the**

jejunum can occur. It usually appears 6 months after gastrojejunostomy. Many cases occur within 2 years, but it may be delayed beyond 10 years. Such an ulcer is the forerunner of GJCF. It can be symptomatic, may remain silent, or may penetrate and perforate into the adjacent transverse colon, acutely, sub acutely or clinically resulting in formation of GJCF (Kirsner, 1971). The time interval between the original surgery and formation of fistula, varies from a few months to more than 20 years, the average being 5 years (Atwater, 1943; Gessler, 1956).

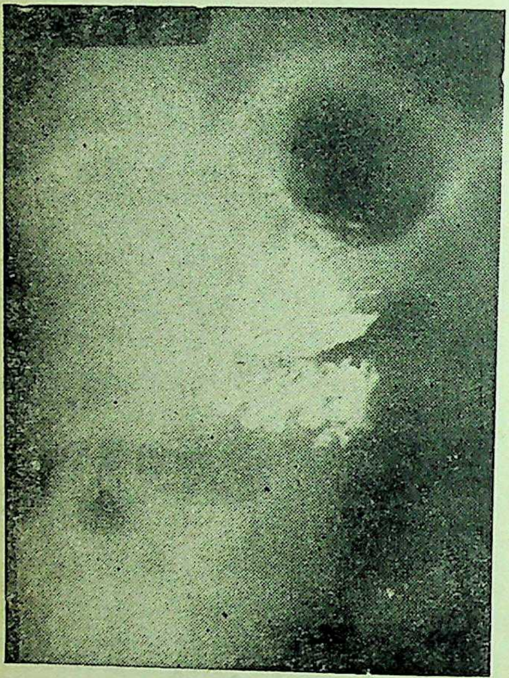

Fig. I. Shows the barium filling up the descending colon, the splenic flexure, the left half of the transverse colon and thereafter the jejunal loops as well as the gastrojejunal anastomosis.

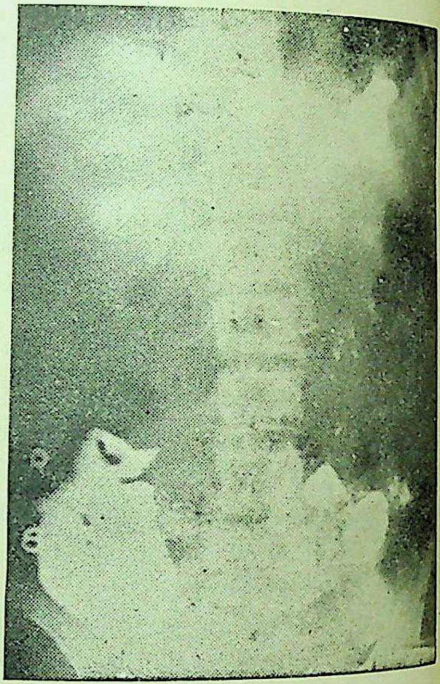

Fig. II. Shows the gastrojejunal anastomosis (Barium meal series).

The clinical features of marginal ulcer may or may not precede the development of fistula (Mc Celland, R. N. 1971). If present, the symptomatology disappears, soon after the development of fistula, because of regurgitation of alkaline colonic contents. In our patient, the marginal ulcer remained silent for 5 years. Obviously, the original surgery had failed to correct ulcer diathesis, probably due to incomplete vagotomy.

GJCF is the most serious sequel following gastro-jejunostomy. Czerny, as early as 1903, defined a GJCF following gastro-jejunostomy. The first comprehensive report had been by Verbrugge of Mayo Clinic in 1925. Marshall (1957) reported that one out of 7 marginal ulcers, develops a GJCF. In his series of 257 jejunal ulcers, 49 developed fistula (18%) (Marshall and Khud—Hansen 1957). Atwater, *et al* (1943), reported, the incidence of fistula following G. J. as 14%. The incidence of marginal ulcer seems to be declining following more aggressive initial surgery for peptic ulcer; 98% of GJCF occurs in males (Kirsner, 1971). Of more than 400 cases reported until 1958, only 6 were in women (Fitzgerald and McMullin, 1958). Records of the Department of Surgery, Louisiana State University School of Medicine revealed only 5 such cases over period of 30 years (between 1940 and 1970) (Cody, *et al* 1975).

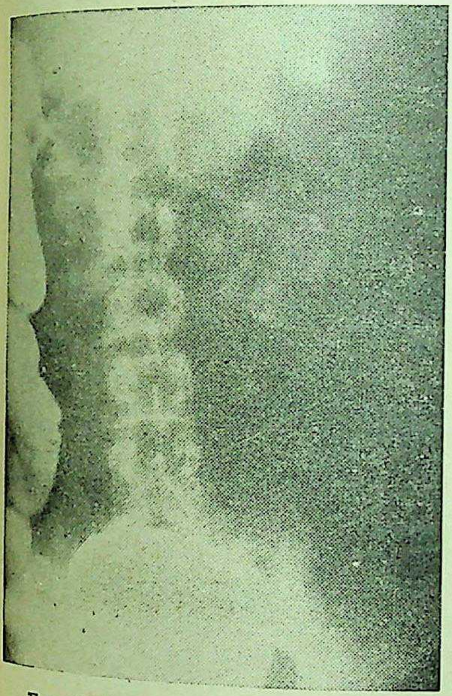

FIG. III. Post-operative barium enema study showing normal flow of barium

The clinical features include : severe diarrhœa, steatorrhea, eructation of foul gases, fecal vomiting, severe malnutrition, anæmia, hypovitaminosis, peripheral edema, electrolyte disturbances and marked weight loss. The classical diagnostic symptom of the fecal vomiting is uncommon and was present only in one out of 12 cases of gastro colic and GJCF (Cody, *et al* 1975). The pathogenesis of this syndrome is the transit of fecal material through the small intestine, associated bacterial proliferation and resultant derangement of vital digestion and absorptive functions (Kiskaddon, *et at* 1943).

A simple diagnostic aid in GJCF is aspiration of fecal material through the nasogastric tube. However, this was negative twice in our patient. Intermittent plugging of the fistulous communications by food or mucosal folds might explain this as well as the intermittence of diarrhœa (Kirsner, 1971). Theony *et al* in 1960, first established the diagnostic accuracy of barium enema studies. The success rate with barium enema was 95%- but with barium meal it was only 27%. Even in barium enema, often the exact site of fistula is difficult to determine radiologically. The radiologist notes the filling of the stomach and jejunum with barium, from some point in the left transverse colon, as in this case. The fistula was demonstrated in 9 out of 12 cases reported by Cody *et al* (1975).

Following steady advances in pre and post-operative care, the surgical management of these cases, had undergone a great change over the years. Pfiffer and Kent, in the late 1930's proposed a three-stage procedure. The operative mortality then was 25%. Following the two-stage procedure proposed by Lahey in 1938, the mortality came down to 4% in 1937—1946. The one stage procedure carried out in this case was first proposed in 1940's. 76 patients underwent such a procedure between 1941 and 1960. The mortality rate was only 2·6% in a 5 year follow up of 63 of these patients (Barber *et al*, 1962). One stage procedure is ideal (Maingot, 1974) when: (1) the patient's general condition is good, (2) the first operation had been only a gastro-jejunostomy and (3) the scarring and adhesions are not too extensive. Principles of this procedure are:—(1) Separation of the colon from the mass containing the fistula, freshening of the edges of the opening and closure. If the opening is too large, colectomy with end to end anastomosis is done; (2) Undoing the gastro-jejunostomy and closure of the opening in the jejunum. If necessary, excision of a segment with end to end anastomosis (3) A Schoemaker-Billroth II type of gastrojejunal anastomosis.

Conclusion.—GJCF is a rare sequel following surgery for peptic ulcer disease. The forerunner of such a fistula, is the marginal ulcer, but it can remain asymptomatic. The classical diagnostic symptom of fecal vomiting is only exceptionally present and diarrhœa can be intermittent. Ryle's tube aspiration is a simple diagnostic aid, but can be negative. Barium enema studies are conclusive, but not bariu mmeal series. Early recognition is essential, since the treatment is only surgical. Prompt resection and reconstructive one stage surgery is rewarding as in our patient. Though such a fistula is rare. one has to bear it in mind, if a patient with a laparotomy scar develops, continuous or intermittent, mild or severe diarrhoea.

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General Practitioners' Series

B. C. G. VACCINE

(IN THE PREVENTION OF TUBERCULOSIS)

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TUBERCULOSIS is the most widespread of all the infectious diseases in the country. It has eaten into the core of the human society, striking with a damaging effect at two main sources of human well being (*viz.*) health and work.

The disease is controllable as well as preventable; we have however failed to achieve either. It is estimated that there may be eight million persons in India who may be suffering from tuberculosis. Out of these, there may be two million open cases who remain a reservoir for the spread of the infection.

We in India unfortunately have not given serious thought to the question of its control or prevention. The tragedy of tuberculosis is that the vast majority of people have not got the proper understanding regarding the nuture and sinister potentiality of the disease and they expect it to be cured and controlled like other diseases. The other and even greater tragedy is that tuberculosis does not create panic like other epidemics. The disease usually develops insidiously and the patient dies slowly. As the patients suffering from tuberculosis are sick for some time before death, people get used to the tragedy and their death does not cause a stir in the public. If the same number of deaths, that are occurring with tuberculosis every year occurred even for one year from cholera or plague, the outcry would be tremendous. Unluckily in the case of tuberculosis, the problem remains a private concern between the patient, his relatives and the doctor, without rousing any public interest.

Tuberculosis is quite different from other infestious diseases in a number of ways:—

(*a*) Tuberculosis is an infectious disease, which means that it is communicable from one person to another. The disease is caused by tubercle bacilli. These germs are present in the sputum of tuberculosis patients in such large numbers, that a single patient with open lung tuberculosis is estimated to cough out millions of these germs in one day. Knowing that there are lakhs of patients suffering from lung tuberculosis in our country, the huge number of germs coughed out by them can well be imagined.

(*b*) Other infectious diseases like cholera, plague, smallpox etc., break out only periodically, and they effect only a small part of the country, and die out with proper health measures in a few weeks or months. Tuberculosis on the other hand, is present everywhere and at all times.

(*c*) Patients suffering from other infectious diseases either get well or die of the disease in a few days, or weeks while patients suffering from tuberculosis live for months or years before they die, and thus they continue to be a source of infection to others for a very long time.

(*d*) Our ignorance about the nature of the disease, and our wrong methods of living, overcrowding, bad housing conditions unhygienic personal habits and social customs help to maintain a close contact between the patient and the public. These factors play a great part in the spread of the infection on a very wide scale.

Control of this disease, therefore, though possible is not an easy affair, especially when we know that the infection is widespread and the factors leading to the spread of infection and the development of the disease are common.

Control of tuberculosis when reduced to its barest minimum may be described under the following heads :—

(1) *Health education* :—It is very important to make people tuberculosis conscious. They are to be told that the tuberculosis problem in India is such a gigantic medico-socio economic problem that it is impossible to solve it without the help of people from all walks of life. This education should be a continuous process and every avenue for publicity may be made full use of. (2) People are to be told that tuberculosis is fully curable if the treatment is taken regularly and uninterruptedly as prescribed by the doctor. (3) The disease is curable in a shorter period if the treatment is started early and taken regularly. (4) Interrupted and irregular treatment is harmful not only to the patient but to the society as well, as it leads to drug resistance among the patients. (5) Surgery has still got a place in selected cases of tuberculosis. (6) Provision of enough medicine for the continuous treatment of patients. (7) General practitioners can play an appreciable role if they could be equal partners in the campaign. (8) The improvement in housing conditions, lessening of overcrowding, and raising the standard of living by the improvement of the economic conditions would surely be helpful. (9) The immunisation of the people against tuberculosis by artificial means.

Immunisation of the people stands out as a most practical measure, under the present circumstances which can be used in the prevention of tuberculosis.

From the earliest time it has been known that there are some infectious diseases from which a man suffers twice. Jenner showed that this sort of immunity might be acquired without going through a serious illness. He inoculated people with cowpox, which caused only a trivial infection, but rendered them immune to smallpox. Today it is an universally admitted fact that smallpox vaccination has played the biggest role in the prevention of this dreaded disease.

Ever since the discovery of tuberculosis germ, attempts have been made to develop a vaccine which could artificially produce the acquired immunity against tuberculosis. Dr. Calmette and Dr. Guerin, in 1908, developed a strain of bovine tuberculosis germ in their laboratory which had lost its power of causing tuberculosis in animals, and this paved the way for the preparation of vaccine, which could be used as an immunising agent against tuberculosis. It, however, took another thirteen years of testing, before it was finally declared safe for human use.

The vaccine is called Bacillus Calmette Guerin Vaccine, being named after doctors Calmette and Guerin who first prepared it. For abbreviation it is called B.C.G. Vaccine.

It is a live vaccine like smallpox lymph, which means that it is a suspension of living but attenuated bovine tubercle bacilli. The germs in this vaccine have been so much attenuated that they cannot produce the disease, but produce an immunity in the body against tuberculosis. It must be used like calf lymph before it deteriorates. Kept in a cool place it maintains its potency for ten days.

B.C.G. Vaccine is an important potent weapon to prevent the disease. If every new born child gets B.C.G. vaccination during its infancy and once again at an age of about ten years it gets protection from disease throughout life.

Vaccination can be done by injecting a very small measured quantity of B. C. G. Vaccine intradermally by a special syringe in the arm.

The local reaction is usually slight, and takes the form of slight reddening and thickening or ulceration at the spot, which reaches a maximum in ten to thirty days. In rare cases there may be a little enlargement in the lymph gland in the armpit. The marks usually disappear by about six months. There is no general reacion like fever, or malaria, nor does the child find the local conditions painful.

The vaccination was first started in Paris on 1st July, 1921 when Doctor Calmette decided to apply immunisation to new born infants by feeding the vaccine to them. After a three year's trial, in which 300 infants were "vaccinated" with B. C. G.

with no ill effects, the vaccine was distributed in France and some other European countries and South America. By 1928 100,000 infants had been vaccinated in France alone, and in 1932 Calmette claimed a world tolal of over a million.

An International Congress devoted to the subject of B.C.G. vaccination held in Paris and Lille, France June 18-23, 1948 under the Presidentship of Professor C. Guerin has established the absolute safety of B.C.G. vaccination in human beings and has been found at to be the most effective means of preventing tubercutosis; the decision being based on the study of more than 10,000,000 vaccinations made throughout the entire world in a large number of conutries.

In India B.C.G. work was started in 1948 when the Central Government established a B. C. G. laboratory at Guindy near Madras. This is now the biggest laboratory in the region, and produces vaccine which not only meets the needs of the country but serves some of the neighbouring countries.

Experimental B.C.G vaccination was started at Madanapalle Madras and Delhi in 1948 and soon after in 1949 B.C.G. vaccination was started in school going children in many States with the help of W. H. O. who provided necessary personnel and vehicles for the purpose. The work went on well for a few years then some doubts arose in some parts of the country about the efficacy of the vaccine. These, however, were removed, when the all India B.C.G. Conference was held in which all aspects of B.C.G. vaccination were thoroughly discussed, and it was finally established that B.C.G vaccination was the most potent weapon to prevent tuberculosis if used systematically and continuously.

In 1962 the National Tuberculosis Institute at Bangalore evolved a formula under the name of "District Tuberculosis Control Programme" which was to be conducted by trained teams and it aimed at controlling and prevention of tuberculosis. The Central Government recommended this programme to all the States in the country, but it has not been implemented in its true spirit, in many States. The working of the programme all over the country had remained for from satisfactory. As health is a State subject and the working of Health Department differs from State to State and from time to time.

Even in States which have provided a team of B. C. G. vaccinators for each district, the output of work has been much less than expected. The resons for this are :—

1. The B.C.G. vaccination is different from vaccination against other diseases like cholera or plague. Since tuberculosis is present at all times in every part of the country the B.C.G. work to be really effective must be a continuous process and fo

this regular supply of B.C.G. vaccine according to the schedule of work is essential.

2. The vaccine is more effective if given in childhood, and therefore the greatest importance should be attached to the vaccination of school children. To achieve this end, co-ordination between the Chief Medical Officer, District Education Officer and District Revenue Officer is very important. It can be easily brought about if all these officers are taken as members of a district branch of tuberculosis association. These officers may meet once in two months and draw up a plan. After this the Chief Medical Officer may inform the head of the B.C.G. team, the programme for the coming two months. The District Education Officer may send letters to the headmasters of the schools which are to be visited by the vaccinators and the probable date of their visit. Revenue Officer can arrange to send information through Patwaris or lambardars to the nearby villages around those schools to get the newly born children in the villages vaccinated. If this programme is pursued with enthusiam far a few decades, it can greatly reduce the occurrence of tuberculosis 2–in the next generation.

Record of vaccination —Vaccinations may be recorded in a register meant for this purpose. Each page of the register may have the following columns :—

(1) Serial number, (2) Name of the child, (3) Age of the child, (4) First vaccination (if the child had not received any B.C.G. before, he may be given the first vaccination). (5) Second vaccination (it should only be given seven to nine years after the first vaccination. Supposing there is a child of five years, who has received the first vaccination during the first year of his life, the second vaccination may only be done at the age of ten years), (6) Those who have received vaccination twice (no further vaccination is to be given to them), (7) Any adult who has not received B.C.G. earlier and approaches for vaccination, (8) Remarks, if any.

Each register may have a label on its cover which may indicate the following :—

1. School rural area, school urban area, non-school going children rural areas or urban areas.

This record can be of great help in evaluating the B.C.G. vaccination work as a whole, and ways and means may be found to improve it further to be more effective.

Finally it must be definitely understood and emphasized that B.C.G. vaccination is not the solution to the tuberculosis problem, but it is a very important addition to the other anti-tuberculosis measures. Under present conditions its use should make it possible to markedly reduce active tuberculosis. It should not, however, in any way lead the Government and the people into a false sense of security against the disease, and proper attention should also be paid to the other aspects of the anti-tuberculosis programme.

FREQUENCY OF CERVICAL CANCER SCREENING

Q. There are conflicting reports between Canadian and United States investigators about the frequency of performing Papanicolaou smears for the detection of cervical cancer. What are your recommendations ?

A. In my opinion there should definitely not be any age limits set as they are in the Walton Report of Canada. Regardless of age, any woman who engages in coitus should be screened cytologically for early neoplastic lesions. There should also be no age limit in the post-menopausal years. However, since it would be unrealistic to ask that every woman have an annual smear from the onset of coitus to the end of life, one could propose a relatively safe alternate recommendation that would neither inconvenience the patient, overtax the capacity of the cytology laboratories, nor represent a medical hazard of missing invasive lesions, while staying within the economic bounds of health care provision systems.

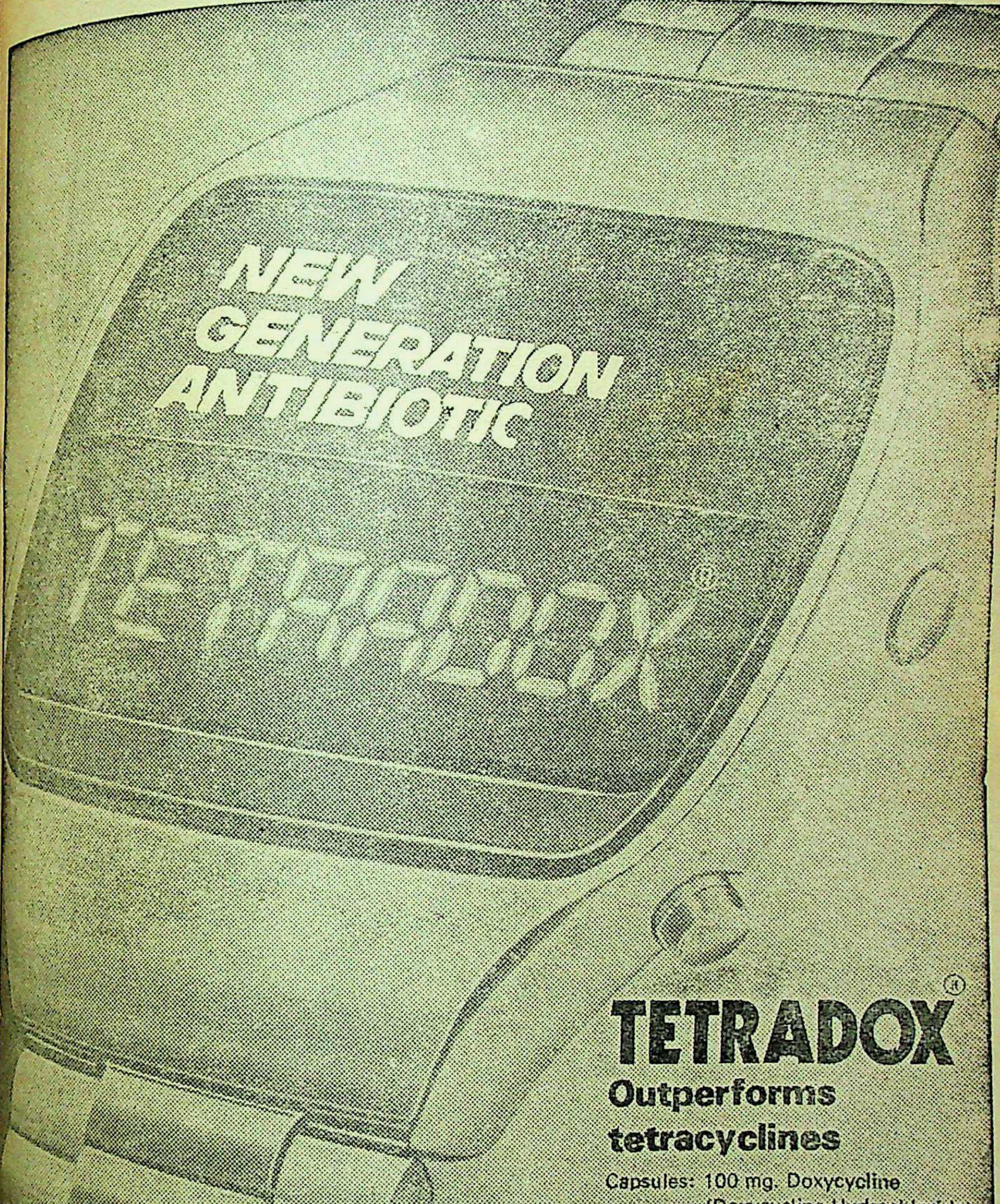
This recommendation would be that every patient regardless of age who has engaged in coitus should have one cytological examination per year for three consecutive years. If these three annual cytological samples were normal, one could consider placing this patient on a schedule of one smear every three years for life, unless she belongs to a high-risk group. On the other hand, low-risk patients (such as those who had a hysterectomy for benign disease) should be screened less frequently, possibly only every three to five years.

A. Current standards' of the American College of Obstetricians and Gynecologists call for periodic examination to "begin with the onset of sexual activity, or at the latest by age 18. Present knowledge suggests that these examinations should be performed in the healthy woman annually". The application of these standards to all women is presently being re-examined.—(*J.A.M.A.*, 19th Jan. 1979).

SURGICAL TREATMENT OF IMPOTENCE UTILISING INFLATABLE PENILE PROSTHESIS

The inflatable prosthesis is constructed of Dacron re-inforced silicone rubber, is implantable, completely concealed, and is filled with 25% radiopaque solution, it operates as a hydraulic fluid transfer system. The device consists of 3 major components (1) a reservoir, (2) an inflating pump with its attached deflating valve, and (3) varying-size inflatable and deflatable penile cylinders. These three are connected to each other by sillicone elastomer tubing. The inflating pump is placed in close proximity of the testis in right handed individuals in the right scrotum. The reservoir is positioned anterior to the bladder under the rectus fascia, and suitable-length penile cylinders are placed within the paired corpus cavernosum. When an erection is desired, the inflating bulb is repeatedly compressed to a point where suitable size erection is achieved. Compressing the inflating bulb tranfers fluid from the reservoir into each penile cylinder. Pressure on the releasing valve permits the fluid to return to the reservoir when detumescence occurs.

The surgical treatment of erectile impotence is an effective therapeutic modality in the select male. The inflatable penile prosthesis is a prosthetic device, reasonably easy to insert, and a means of attaining satisfactory erections. Results reported although limitted have been excellent.—(*New York State Journal of Medicine*, Oct. 1978).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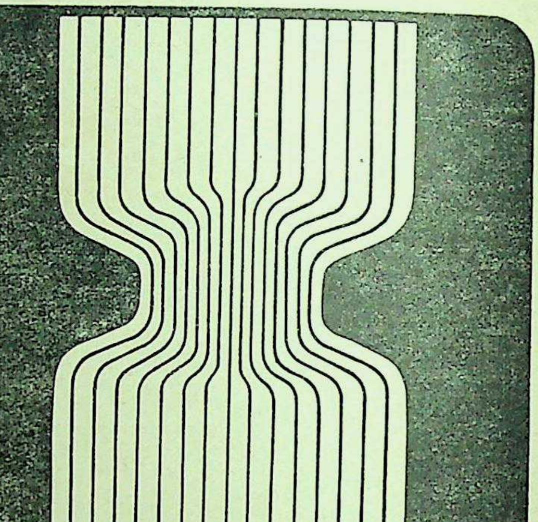

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The Antiseptic

Vol. 76 | OCTOBER, 1979 | No. 10

Editorial

REMODELLING MEDICAL EDUCATION TO MEET RURAL HEALTH NEEDS :

IT has been recently reported that our Prime Minister Sri CHARAN SINGH presiding over a four day National Conference on Medical and Health Education, has called for a "radical and drastic change in the present system of medical education, and went on to characterise the present system as one which is imparting medical education to boys and girls in cities alone and for foreign lands, and has therefore to be modified" The Indian Medical Association has rightly desisted from participating in this conference on the grounds that the agenda was not supplied to it in time, and that further, a care-taker Government is precluded from taking major decisions on vital policy matters. In the first place, there are no different patterns of medical education, one for those living and brought up in cities, and another set for those who live or hail from rural areas. It is not clear whether the Prime Minister was referring to the inadequate health care, sanitation etc., obtaining in some rural parts of India and the consequent incidence of various disease; or the paucity of doctors in remote rural areas to attend to all the rural medical needs. If the Prime Minister and the Union Health Minister are dissatisfied about the sanitation, unhealthy surroundings, inadequate public health care etc., giving rise to various diseases they may have to hold the State Governments responsible in as much as Public Health is a State subject. It is indeed ironical, that the present Health Minister Sri RABI RAY told the Lok Sabha so recently as on 3rd May, 1979 that the life expectancy in India is now estimated at 52·6 years for a male and 51·6 years for a female, compared to 41·9 years in 1959, 46·4 years in 1966 for males; 40·6 in 1956, 44·7 in 1966, for women; and "that the average life expectancy of the Indian people has increased by 20 years after independence". The obvious conclusion that may be reached from these figures is, that public health care has been steadily increasing over the years, and more than anything else, the rural population who constitute nearly 80% of the total population have become health conscious and have taken to better living conditions, despite the fact that there are still hundreds of villages and municipalities who do not have the basic amenities of protected water supply and well equipped hospitals. Why then, blame the medical education? Where does medical education enter into this picture as a villain of the piece? If however, the Prime Minister was referring to the slogan-based view that there are not adequate number of doctors going out to settle in remote villages, let us face facts. The Minister of State for Planning, Mr. FEZLUR RAHMAN, stated in a written reply in the Rajya Sabha as early as May, 1979, that there are 29·4 crores of people living in rural and urban areas below the poverty line during 1977-78. On account of the escalating prices of all essential commodities, this figure would now have touched almost 60% of the population of India. And what is poverty line? It is estimated at 2400 calories or Rs. 61·80p. for rural areas, and 2100 calories or Rs. 71·30p. for urban areas for a person per month. How can the majority of the rural population who cannot have one square meal a day, afford the cost of all the modern allopathic medicines which would cost at least 1/2 to 1 Re. a day, and which amount they would gladly elect to spend on their food rather than on the medicines? Why, for that matter, are all the sick and diseased in urban areas and municipalities living below the poverty line attended to in full? (where according to our Prime Minister doctors are swarming like bees?). It is a sad spectacle to witness the long and aggressive queues thronging the outpatient departments of all hospitals for hours on end. One doctor has to attend to nearly 500 to 600 patients. Outpatients complain that they are not able to draw the medicines after the long wait in queues to secure the prescriptions. As a result of the keen unemployment and deteriorating economic conditions, many doctors have actually set up practice in rural areas near about towns. It has been admitted by Government that all primary health centres in rural areas are manned by competent doctors. If more doctors do not fan out, and settle in the interior villages the State Government have only to be blamed for non-supply of even the basic need of protected water supply, lack of proper houses or quarters, want of proper educational facilities, want of a decent drug store within easy reach, inadequate remuneration to keep the wolf from the door, no guarantee of lucrative practice even when a doctor is prepared to wait patiently for a number of years. People high up or those in power, cannot realise the enormous difficulty in fighting against rural sentimentalism, customs and practices, and the powerful hold which the local Vaid has, over the rural masses, which an allopathic doctor settling in a village has to contend with. Why then blame the existing medical education? Let not the powers-that-be start interfering with medical education, the quality and usefulness of which has stood the test of time.

Advances in Medical Technology * * *

ULTRASONIC DIAGNOSIS REPLACES SURGERY

The use of ultrasound in diagnosis is replacing the need for exploratory surgery in many cases at major Sydney hospitals.

In consultation with hospital staff, the Ultrasonics Institute of the Australian Government's National Acoustic Laboratories is conducting research on a wide range of diagnostic applications of ultrasound.

Its U. I. Octoson machine was developed by physicist Mr. George Kossof, director of the Institute, and Dr. William Garrett, head of the Department of Diagnostic Ultrasound at Sydney's Royal Hospital for Women.

It was initially for use in obstetrics. With high frequency sound waves, the machine can rapidly produce on polaroid film clear images of the child in the uterus. The film replaces X-rays, which have been shown to be potentially dangerous to unborn children.

Since designing and building the Octoson, the result of 19 years' research, the institute has continued to pioneer new diagnostic techniques using ultrasound.

Echo-scanning is now being used in the examination of other soft tissues such as the heart, breast and eyes.

Like a submarine's sonar apparatus, the Octoson converts short electrical impulses to short ultrasonic impulses of 3,000,000 cycles per second (the limit of human hearing is 20,000 cycles). The high-frequency sound waves are directed through either fixed transducers (hence the name Octoson) which rapidly scan the patient's abdomen.

As ultrasound will travel through water or soft tissue but not through air, the transducers are immersed in water and the patient's body is in contact with a membrane containing the water. The rebounding impulses from the patient are reconverted to electrical impulses which can be displayed on a television monitor or recorded on film or tape.

A recent important clinical advance has been the application of a combined sectional imaging and pulsed ultrasound technique to measure blood flow in deep vessels. It was first applied to measure the flow in the fœtal umbilical vein.

Abnormal flow values have been found in certain high-risk pregnancies and the technique is being used to monitor these.

The method has also been applied to measure blood flow in abdominal vessels.

Another clinical application of ultrasound has been the development of a new breast echoscope. This provides images at five frames per second, and is being evaluated at Sydney's Royal North Shore Hospital in tumour examinations.

A high-resolution echoscope at the Royal Prince Alfred Hospital in Sydney is being used for eye and thyroid examinations, and investigation of congenital heart anomalies in children, using the U. I. Octoson, are being undertaken in conjunction with the Prince Henry and Prince of Wales hospitals.

In the last year the institute also has developed a computer system to process ultrasonic data provided by the echoscope.

Eighteen units of the U. I. Octoson, which is made by Ausonics Proprietary Limited under licence to the Australian Government, have been installed in Australian hospitals, and 25 exported to the United States, Japan and Europe.—(COURTESY: *Australian Information Service*).

SHOULD DIGITALIS DRUGS BE WITHHELD IN PATIENTS WITH PULSE RATE LESS THAN 60 BEATS PER MINUTE?

Question :—A long standing practice of hospital nursing personnel is to withhold digitalis drugs from any patient with a pulse rate of less than 60 beats per minute. Would you please comment on the propriety of this practice and suggest a reasonable hospital policy for dealing with it?

Answer :—Established practices, though outmoded. are often nearly impossible to modify. This problem is increasingly important in view of the large number of cardiac patients receiving both β-adrenergic blocking agents (propranolol hydrochloride) and digoxin. These patients may thus have one or both drugs withheld for a pulse rate found to be 60 beats per minute or less. Indeed, a large number of patients conjointly treated with propranolol and digoxin will have heart rates between 45 and 35 beats per minute without ill effect. Moreover, the elderly patient with physiological vagotonia may have even slower ventricular rates in the early morning hours, particularly if atrial fibrillation is involved.

The clinical situation should determine whether a drug is to be withheld. Only a minority of patients receiving digoxin require that the drug be withheld for reasons of bradycardia alone. More often, the patient with digitalis toxicity frequently has associated constitutional complaints or objective evidence of cardiac toxic reaction (secondary atrioventricular block, junctional escape rhythms, ventricular ectopy). In this regard carotid sinus massage is often helpful in disclosing incipient toxic reactions, thus alerting the physician to withhold or decrease the dosage of digoxin. Nursing personnel may contact the patient's physician for a pulse less than 50 beats per minute, at which time a conjoint decision could be made as to appropriate management.—(*J.A.M.A.*, 21st April, '78.).

GLEANINGS

MEDICINE AND THERAPEUTICS

Bronchial asthma.—(*Texas Medicine*, December, 1978).

The emphasis of the medical history in evaluating a patient should be upon factors which trigger acute bronchospasm. Those in status asthmaticus must be identified since immediate and vigorous therapy is indicated. Avoidance of known allergens is the treatment of choice. This is certainly possible in the case of foods, drugs, and animals, but becomes more difficult when the sensitising substance is a pollen, mould, or house dust. Methyl xanthines are considered the drugs of choice for almost all asthmatics during all stages. Theophylline is the basic compound in most, and has a half life in adults of 4·5 hours. Aminophylline the most commonly used drug is the ethylene diamine salt of theophylline. Aminophylline should be administered I.V. to all patients in stages 3 or 4 and in many, in stage 2. A loading dose ranging from 5 to 9 mg/kg. not exceeding 500 mg. over a period of 20 minutes followed by a continuous infusion of 0·5 to 1·2 mg/kg/hour is administered. For adults already taking aminophylline, the maximum additional loading dose should be no more than 250 mg. Theophylline should be given orally to all patients and maintained for several weeks following an acute attack. There is evidence that chronic therapy with this drug will prevent recurrence.

Preferential treatment of acute asthma in stages 2 through 4 is subcutaneous adrenalin or terbutaline. The latter drug has advantages of being a pure beta-2 agent and with a longer duration of action. A recent study has shown that combined therapy with oral aminophylline and terbutaline may yield greater bronchodilatation with lower toxicity than with either drug used alone in higher doses.

Steroids are indicated in patients with acute asthma in stages 3 and 4 and also those chronically in stages 1 and 2, who are unresponsive to other drugs. For acute conditions, the recommended dose varies from 5 to 200 mg. of prednisone or its equivalent per day, This is the ideal oral drug because of its short duration of action low cost etc. and its tendency to reduce frequency of attacks.

The recent introduction of beclomethasone dipropionate (Vanceril) has revolutionised the therapy of severe asthmatics. The drug is administered by inhalation and has the advantages of no significant suppression of adrenal function and no systemic steroid effect. The major hazard of beclomethasone is adrenal insufficiency in patients who have been on long-term treatment with oral steroids. Atropine might be of considerable value in patients whose constriction principally involves the larger airways.

Intravenous insulin infusion in diabetic emergencies. (*British Medical Journal*, 11th Nov. 1978).

Continuous I.V. insulin and dextrose infusions were used in managing various diabetic emergencies. Standard and constant rates of insulin and dextrose infusion resulted in satisfactory control of blood glucose concentrations during labour, after major surgery, and in patients recovering from ketoacidosis. Higher infusion rates were used to correct or prevent ketoacidosis in pregnant diabetic women who had received steroids and sympathomimetic agents. Insulin infused at constant rates was effective in managing patients recovering from diabetic ketoacidosis (3 U/h), major operations (2 U/h) and in diabetic women in labour (1 U/h.). The insulin infusion rate seldom needed to be changed. The problems of diabetic control when insulin resistance develops after administration of steroids or I.V. salbutamol have been greatly reduced by using insulin infusions. When steroids or sympathomimetic agents are given to pregnant diabetics to enhance lung maturation or delay labour, hyperglycæmia with ketoacidosis may rapidly ensue, and higher insulin doses may be needed than in diabetic ketoacidosis, when 6 U/h is usually adequate. After steroids insulin infusion is started as soon as blood glucose concentration begins to rise, but when I.V. Salbutamol is given it is wise to start the insulin infusion at the same time. Good control of diabetes, which is essential during pregnancy should also be maintained throughout labour. I.V. dextrose and insulin infusions are effective in the management of diabetic emergencies, is simple, reliable and flexible.

Penile venereal edema.—(*J. A. M. A.*, 12 January, 1979).

Penile venereal œdema is an unusual condition that may alarm patients and perplex physicians. It is a benign, self-limited condition. The oedema presents as a painless, boggy swelling involving the prepuce and the penile shaft. Although a variety of etiologic factors have been proposed ranging from menstrual blood skin irritation to viral or tuberculosis infection, most cases were associated with urethritis, penile lesions, or a history of penile trauma. Study results suggest, that penile venereal edema has many causes. 24 of the 25 patients had co-existing penile disease that was either urethritis (36%) an infected skin lesion (36%) or both (24%). Gonococcal urethritis was overrepresented in men with edema. whereas non-gonococcal urethritis was not. Infected skin lesions were caused by a variety of entities, including genital herpes, scabies, traumatic ulcers, and ulcers of undetermined etiology of which herpes and scabies occurred more often than expected. The pathogenesis of penile edema remains speculative. Although some early reports emphasised a non-venereal cause, penile edema in our study was temporarily related to recent sexual contact and co-existed with a sexually transmitte disease in 18 (72%) patients. Finally, the inguinal adenopathy seen in 13 (52%) of the patients is noteworthy and supports lymphatic involvement secondary to penile infections as an unifying element in pathogenesis.

Diagnosis of Penicillin allergy by skin testing: The Manitoba Experience.—(*J.A.M.A.*, 6th Oct. 1978).

The reliability of skin testing in the diagnosis of penicillin allergy was studied in 86 adults and 167 children with a history of possible hypersensitivity reactions to penicillin. Skin testing was done with the major antigenic determinant of benzylpenicillin and minor determinants of benzylpenicillin, ampicillin, cloxacillin, methicillin, and cephalothin. The overall frequency of positive skin reactions was 11·5%. Among the patients with positive skin reactions about half had a history of immediate or accelerated reactions to pencillins, but two of 11 adults and 50% of the children had a history of maculopapular rash of delayed onset. A low frequency of positive skin reactions was related to long interval between clinical reaction and skin testing. Of 169 patients reacting negatively to skin testing who received a specific drug challenge only two showed mild urticaria, indicating the reliability of the skin tests in predicting penicillin allergy. The major and minor determinants of benzylpenicillin were the most useful reagents. One fifth of the patients with penicillin hypersensitivity would have been missed if the major determinant of benzylpenicillin alone had been used for skin testing. The additional use of the minor determinants of other penicillin derivatives, however, did not increase substantially the clinical reliability of the skin-testing procedure.

PAEDIATRICS

Fuctional murmurs in children —(*New York State Journal of Medicine*, Nov. 1978).

Functional, innocent or benign murmurs are all synonyms indicating the presence of audible murmurs in the absence of any anatomic or physiological abnormalities of the heart or great vessels. Most innocent murmurs are midsystolic and some are continuous through systole and diastole. Diastolic murmurs in normal children are rare and for practical purposes murmurs that occur only in diastole should be considered organic. Functional murmurs are said to be accentuated by conditions which increase cardiac output such as exercise, excitement, fever, anemia, thyrotoxicosis, and pregnancy. Murmurs are graded on a scale I to VI.

Grade I—murmur is barely audible.
Grade II—murmur is well heard.
Grade III—is loud, but without a thrill.
Grade IV—murmur is loud accompanied by a thrill. *Grade V* murmurs are heard, when the stethoscope is partially touching the chest. *Grade VI*, murmur is heard when the stethoscope is not touching the skin. Most functional murmurs are no louder than *Grade III*, but it should be emphasised that the intensity of the murmur does not exclude nor establish an innocent or organic cause. The incidence of functional murmurs in the normal population varies from 17 to 66%. Functional murmurs are often classified as vibratory, ejection type, carotid bruit, venous hum, and mammary souffle.

Vibratory systolic murmur (Still's murmur):—This is a midsystolic murmur most commonly heard between the ages of 2 to 6 yeare. It is low pitched, occupies early to midsystole, is heard best at the lower left sternal border at the third to fourth intercostal space and frequently radiates towards the apex and cardiac base but not to the axilla. This murmur should be differentiated from that of a ventricular septal defect, is holo-systolic, harsh, and located at the left lower sternal border.

Pulmonary ejection murmur:—Is a blowing crescendo-decrescendo ejection type murmur heard best in the supine position with the diaphragm of the stethoscope at the second left intercostal space over the pulmonary area. Intensity is grade I to III/VI, is heard in early to mid systole, and is more common and louder in thin patients.

Carotid bruit:—Is heard in children and adolescents. It is a systolic ejection type and usually appreciated at the base of the heart or, more commonly, at the right supraclavicular area. The murmur becomes louder and the heart sounds softer as one moves the stethoscope toward the neck and over the carotid artery. It is generated probably in the brachiocephalic artery near its origin from the aorta. Hyperextension of the shoulders towards the back or compression of the sub clavian artery may decrease the intensity or abolish it.

Venous hum:—It may be heard in almost all children by careful auscultation in the upright position. It is a continuous murmur not related to the cardiac cycle. Typically, the hum is heard best when the person is sitting up and the chin is rotated toward the opposite side. This murmur becomes much softer and may disappear in the supine position or abolished by finger compression of the ipsilateral jugular vein.

Mammary souffle:—Is a continuous murmur, although in some, only a systolic component is heard. The murmur is by far less common than the venous hum and is usually present in late pregnancy or early lactation. It is heard best in the area of the third to fourth intercostal space on either side or bilaterally. This murmur is louder in the supine position and is not affected by the Valsalva manoeuvre. Local light finger compression may accentuate it, while firm pressure may abolish it. After the lactation period this murmur will disappear. The common belief is, that this functional murmur originates in the arteries of the chest wall.

BOOKS RECEIVED

"Psychology in Relation to Medicine"—(Fifth Edition) By Dr. R. M. Mowbry, Dr. T. Ferguson Rodger and Dr. C. S. Mellor, Pp. 272; M/s. B. I. Publications, Promotion Department, 359, Dr. D. N. Road, Bombay-400 023. [Price: £ 5·00/-

"Recent advances in Anaesthesia and Analgesia"—(13th Number) By Mr. C. Langton Hewer and Mr. R. S. Atkinson, Pp. 246; M/s. B. I. Publications Promotion Department, 359, Dr. D. N. Road, Bombay-400 023. [Price: £ 10·00/-

"Recent Advances in Otolaryngology"—(Fifth Number) By Mr. T. R. Bull, Mr. Joselen Ransome and Mr. Harold B. Holden, Pp. 252; M/s. B. I. Publications, Promotion Department, 359, Dr. D. N. Road, Bombay-400 023. [Price £ 13·00/-

"An Introduction to the Symptoms and Signs of Surgical Disease"—By Dr. Norman, L. Browse, M.D., F.R.C.S., Pp. 418; M/s. B.I. Publications, Promotion Department, 359, Dr. D.N. Road, Bombay-400023. [Price: Rs. 160/-

"Indian Pharmaceutical Guide—1979"—(Seventeenth Edition)—Pp. 1760; M/s. Pamposh Publications, 506, Ashok Bhawan, 93, Nehru Place, New Delhi-110 019. [Price: Rs. 120/-

"Environmental Health Criteria-7"—Photochemical Oxidants—Pp. 111; M/s. World Health Organization, 1211, Geneva 27, Switzerland [Price: Sw. fr. 10/.

"Parikh's Text Book of Medical Jurisprudence and Toxicology"—By Dr. O. R. Pareikh, Pp. 2008; Medical Publications 6, Owners Court, Near Strand Cinema Colaba, Bombay-400 005 [Price: Rs. 42.50

"Baillier's Midwives' Dictionary"—(Sixth Edition)—By: Mr. Vera Da Cruz, S.R.N.M. S.C.M. M.T.D.. Pp. 304; M/s. B. I. Publications, 359, Dr. D.N. Road, Bombay-400023 [Price: £ 0 50

"Bacteriology and immunity for Nurses"—(Fifth Edition)—By: Dr. Ronald Hare, M.D. and Dr. E. Mary Cooks, B.Sc., M.D., M.R.C.P., Pp. 210; M/s. B. I. Publications Promotion Department, 359, Dr. D. N. Road, Bombay-400 023 [Price: £ 3·95

"Psychiatry"—(Fourth Edition)—By: Dr. W. H. Trethowan, C.B.E., M.A., M.B., F.R.C.P., F.R.A.C.P., F.R.A.N.Z.C.P. (Hon), Pp. 483; M/s. B. I. Publications, Promotion Department, 359, Dr. D N Road, Bombay-400 023 [Price: £ 1.50

NEWS AND NOTES

Tamilnadu Tuberculosis Association

Conference on Tuberculosis and Chest Diseases

24th and 25th November, 1979

The Tamilnadu Tuberculosis Association will conduct a State Conference on TB and Chest Diseases at Madras Medical College Seminar Hall on 24th and 25th November, 1979.

For particulars, the Organising Secretary, Tamilnadu Conference on TB and Chest diseases, Tamilnadu TB Association, 81, Mount Road, Madras-600 006 may be contacted.

REVIEWS OF BOOKS

"Aid to Post-graduate Medicine"—(Third Edition) By J. L. BURTON, M.D., B SC., F.R.C.P., Pp. 216; Published by: M/s. B. I. Publications, Promotion Department, 359, Dr. D. N. Road, Bambay-400 023. [Price . £ 2·50 or Rs. 44/-

This book is primarily intended as a revision aid to candidates who desire to appear for the M.R.C.P. examination. The latter examination being practically "out of bounds" for Indian students, one wonders as to its usefulness in our country.

The subject matter of the book is concise and precise and seeks to provide information to the student appearing for the membership examination where the M.C.Q system is used. Every system has been dealt with the necessary answers to questions pertaining to the various illnesses affecting the different systems. Since it is brief and concise it makes for easy reading.

U.V.R.

"Essential Intensive Care"—By Dr. E. SHERWOOD JONES, Ph.D., F.R.C.P., Pp. 514; Published by: M/s. B. I. Publications, Promotion Department, 359, Dr. D. N. Road, Bombay 400 023. [Price: £ 5·95 or Rs. 100·55/-

The Intensive Care unit which has come into its own in recent years has very often proved a boon to seriously ill patients, and when efficiently run, it often provides the difference between life and death. It is an unit which treats critically ill patients irrespective of the nature of their disease. The aim of this book is to help the beginner to understand and practise some aspects of general intensive care in a large district hospital.

The subject matter is divided into 22 chapters. Each chapter is devoted to the emergency care of illness pertaining to a particular system and its management in the intensive care unit. Respiratory failure, cardiac arrest and shock, tracheostomy, asthma, chest injuries, common acute poisonings, diabetic acidosis, renal failure and the various types of dialyses are some of the emergencies described in an excellent manner.

The general get-up of the book is extremely good. It should be extremely useful to young doctors and nurses attached to intensive care units in hospitals. It should also be informative to general practitioners who very often are the first to be called upon to recognise many of these emergencies.

U.V.R.

CORRESPONDENCE

To the Editor, 'ANTISEPTIC', MADRAS.

Query

Sir,

Sub : Treatment of Chr. Folliculitis.

1. Kindly let me known in detail the best way of treating Chr. folliculitis. I have got a few cases of Chr. folliculitis who are suffering for years together. The infection occurs in both legs below the knee joint. All the cases get temporary relief after a course of antibiotics. But relapses occur after a few months. So will you be kind enough to throw some light on the treatment for a permanent cure.

2. Kindly tell me, whether there is any use for the following drugs in treatment of Chr. folliculitis.

(*a*) Placentrex (*b*) Sterodin. If so please indicate the dosages and course of treatment.

M. O. (C.M.S.)
B.W.N.G.,
13, Assam Rifles,
C/o. 99, A. P. O.

P. K. DEB, M.B.,B.S.,

Answer

The folliculitis referred to is Bockharts impetigo. We advise the patient to,

1. Wash area 2 or 3 times a day with soap and water and mop dry the area.

2. Paint the area with Dequadin lotion with a soft brush.

3. Oral chemotherapy with sulphonamides for 7 *days* only *or* any relevant antibiotic. Point 1 and 2 must be carefully followed for 6 weeks to 2 months. Otherwise it will recur. Infection of hair follicles are difficult to eradicate as the hair follicles are literally fox-holes from where the infection cannot be eradicated unless one persists with the advice 1 and 2.

938, Poonamallee
High Road,
Flowers Road, P. O.
Madras 600084

Dr. A. S. THAMBIAH,
M.B. F.R.C.P., D.V.
F.A.M.S.

Query

Sir,

Parents of a boy seeking alliance with a girl whose mother has leucoderma are reluctant to have the engagemant. Can I as a doctor assure the boy's party that there is no risk of the girl developing the same. The girl's grand parents, maternal and paternal, do not suffer from leucoderma. Her two brothers also do not show any such defect. The girl has also no such patches.

Kindly let me have expert opinion on this at an early date.

149, Greams Road,
Madras-600 006.

K. R. BALIGA,
M.B., B.S.,

Answer

The condition is '*Vitiligo*'. This has a *hereditary factor* in a small percentage of cases. Hence in such cases the advice one would give is to inform the parents that the condition is non-infectious and non-contagious and that it is *not* leprosy. One should also emphasize that owing to the influence of hereditary factor in a percentage of cases one must be on the alert as regards the possibility of its occurrence in subsequent generations.

938, Poonamallee
High Road,
Flowers Road, P. O.
Madras-600084

Dr. A. S. Thambiah,
M.B. F.R.C.P., D.V.
F.A.M.S.

Query

Sir,

I shall be thankful to you if you will kindly let me know the effective treatment for 'Acne'. I have a case of a 18 years old boy having pustules on face, neck and shoulders for the past one year which is not responding to Doxycycline, Tetracycline, Penicillin, etc. along with local applications of lotions like Caladryl and Eskamel cream (etc).

Prathibha Clinic,
Marakarkandi, P.O.
Thayil, Cannanore-3.

Dr. P. D.
Chandroth

Answer

Management of acne :

1. Wash affected area 2 or 3 times a day with soap and water.

2. Sulphur ppt. 20 grains ; lotio calmina ad 1 oz. Ft. lotio mitte oz vi shake well for external use at bed time.

3. A course of tetracycline (250mg) one capsule thrice a day which can be taken for 2 to 3 weeks.

4. Yeast 2 tablets daily for three months or longer. Avoid in the diet butter, bacon, chocolate and cheese and other fattening agents.

Note :—Problem of acne would be present on and off till about the 25th year. Hence instructions 1 & 2 must be carefully followed till the 25th year.

Tetracyclines are preferably given before meals and one should avoid iron in the medication.

938, Poonamallee
High Road,
Flowers Road, P. O.
Madras-600084

Dr. A. S. Thambiah,
M.B. F.R.C.P., D.V.
F.A.M.S.

Query

Sir,

An article "Rabies—A reappraisal" by K.S. *et al* which was published in "The Antiseptic" in June 1979 and July 1979 issues, deserves appreciation by all physicians dealing with this problem and they will certainly find it a ready reference of great value.

The following few points may be kindly clarified through your esteemed journal.

(1) The dosage schedule for active immunisation described in the article is applicable only when Beta propiolactone inactivated N.T.V. is used ; but the same schedule is not applicable to old phenol inactivated Semple vaccine.

This was not clearly stated and as such may be confusing to many who are still using the old type Semple vaccine.

(2) Is there any absolute contra-indication to achieve immunisation by NTV ? What precautions are necessary to immunise a person who is acutely ill with any viral or bacterial infection.

(3) What precautions are most essential during transportation and storage of such vaccine ?

(4) Can pre-exposure immunisation be carried out by phenol inactivated NTV, *i.e.*. old Semple type vaccine?

Thanking the authors for such a valuable article and the Editor as well for publishing the same.

Daporijo Hospital,
P. O.. Daporijo,
Arunachal Pradesh
10 8-1979

S. P. Chakraborty,

Answer

(1) Phenol-inactivated nerve tissue vaccine (NTV) or Semple vaccine has now become outmoded and has been replaced by Beta-propiolactone inactivated NTV in many centres. In our article, we have mentioned the treatment schedule recommended by the

Pasteur Institute of Southern India, Coonoor for their BPL-inactivated vaccine. For other NTV's including Semple vaccine, the appropriate manufacturer's guidelines should be followed.

(2) To our knowledge, there are no absolute contraindications to immunisation by NTV which is generally a "killed" vaccine. However in view of the possibility of neuroparalytic reactions occurring in susceptible individuals, though very rarely, a history of occurrence of such reactions following previous administration of NTV if given, may be useful. If there is any allergic potential to NTV, alternate vaccines like the Duck Embryo Vaccine (DEV) or the Human Diploid Cell Vaccine (HDCV) will have to be resorted to, by procuring them from abroad. If there is a real risk of developing rabies in an individual ill with any other viral or bacterial infection, the anti-rabies vaccine should still be given preceded by passive immunisation with equine anti-rabies serum (ARS) or Human Rabies Immunoglobulin (HRIG) as suggested in the article. Since the publication of our article, HRIG has become available in our country ("Bharat Rabies Immunoglobulin"—Bharat Serum and Vaccines, Road 27, Wagle Estate, Thane-400604). The manufacturers recommend a dose of 0·5 ml. per kilogram body weight and the price is nearly Rs. 75/- for a 2 ml. vial containing 200 mg of rabies immunoglobulin. The preparation should not be used intravenously. In cases as mentioned in the question, steroids are best withheld except for life-threatening states as they can interfere with an active immune response induced by the vaccine. Suitable antibacterial or anti-viral drugs and other supportive measures will also be needed.

(3) Ideally the vaccine should be stored in a refrigerator at 4°C and transported under similar conditions. The BPL-inactivated vaccine (NTV) however can be kept at 37°C for 24 to 48 hours without much loss of potency. Direct exposure to sunlight must be avoided.

(4) Pre-exposure immunisation can be carried out by Semple vaccine, when it is the only one available. The dosage will be as per the manufacturer's guidelines.

K. SRINIVAS, D.M., (Neuro.),
F.R.C.P., (Lond.). F R.C.P. (Glasgow)
"Gouri Shankar" 3, Srinagar
Colony, Madras 600015

Dr. N. Raghavan and Dr. M. Narayanan.

Query

Sri,

Kindly let me know :—

1. Is specific immunoglobulin for poliomyelitis advisable for unimmunized children who are in contact with a fresh case of paralytic poliomyelitis? I am asking this question as injections should be avoided in epidemics of polio.

2. Should breast feeding be avoided for two hours before and two hours after giving O.P.V. (Polio dose).

3. Should pregnant women receive O.P.V?

4. What is the latest schedule for O.P.V.

Punjab Building,
Bank Street,
Gondia.
Dr. B. D. BAGGA,

Answer

1. Human immune serum globulin is an inefficient method of poliomyelitis prophylaxis; it prevents only one case for every 500 to 2000 injections and the protection lasts for about 6 to 8 weeks. Its chief value was in close family contacts of affected children and in aborting severe local epidemics. An exposed unimmunized subject should be given 0·15ml. of HISG per kilogram of body weight.

2. It is preferable to avoid breast feeds 3 hours before and after administration of oral polio vaccine, to minimize any interference from breast milk antibodies; but a recent study has shown that there is no marked interference in antibody formation in the immunized child, even if breast feed is given ½ hour before polio vaccine administration.

3. Poliomyelitis among adults is rare in our country because of subclinical infection in infancy and childhood and naturally acquired immunity. Further it may be harmful to administer oral polio vaccine in any nonimmunized adult, because of the risk of developing clinical illness. At present, killed vaccine is being recommended in Western countries for immunizing children with immune deficiency diseases or altered immune states on immunosuppressive drug therapy and non-immunized adults.

4. In view of the inadequate immunity built up by our children, we recommend 5 doses at monthly intervals for primary immunization and two booster doses, subsequently between 1½ to 2 years and 3½ to 4 years.

867, Poonamalle
High Road,
Madras-600 010.

B. R. Santhanakrishnan, A.B., (Ped)

Query

Sir,

Please enlighten me on the following.

(1) What is the route of administration of chloroquine phosphate in children suffering from malaria ?

(2) Trade name of sweetened and flavoured chloroquine preparations ?

(3) Most of the companies manufacturing chloroquine phosphate injection have warned about the use of injections of this drug in children.

Govt. Dispensary, Seoh,
Teh. Serhagha, (*Via*)
Sandhol, Dist.
Mandi, H.P.

Dr. Anil Kumar,

Answer

1. Chloroquine is best administered through the oral route for the treatment of malaria in children.

2. Chloroquine is available in syrup form as "Lariago" (Ipca Lab. Pvt. Ltd.,) with chloroquine phosphate 80 mg. (equivalent to 50 mg. base) per 5ml; the syrup is well tolerated by infants and young children. "Melubrin" is a film coated chloroquine tablet wherein the bitter taste has been effectively masked.

3. Chloroquine injections are likely to produce severe local reactions and hence it is advisable to give the injectable form only if the child is vomiting or is in coma. The dose should not exceed 5mg/kg and can only be repeated once, after which oral therapy is advocated.

867, Poonamallee
High Road.
Madras. 600 010.

B. R. Santhanakrishnan, A.B. (Ped.)

Query

Sir,

I have two diabetic patients put on Daonil 5mg. twice daily, showing a blood sugar level of 250—270 mg.% (1½ hour after food), with no sugar detected in urine. As both the patients are around 60 years of age and residents of rural areas, repeated blood sugar estimation is practically difficult. What do you think is the reason for no sugar in urine even when the blood sugar estimated is around 250g% both samples being taken at the same time ? Please enlighten me on how we can adjust the dose of oral anti diabetics in such cases where only urine examination is possible for routine adjustment of the drug.

Clinic & Laboratory,
Vaniyamkulam

A. Haridas, M.B.,B.S.,

Answer

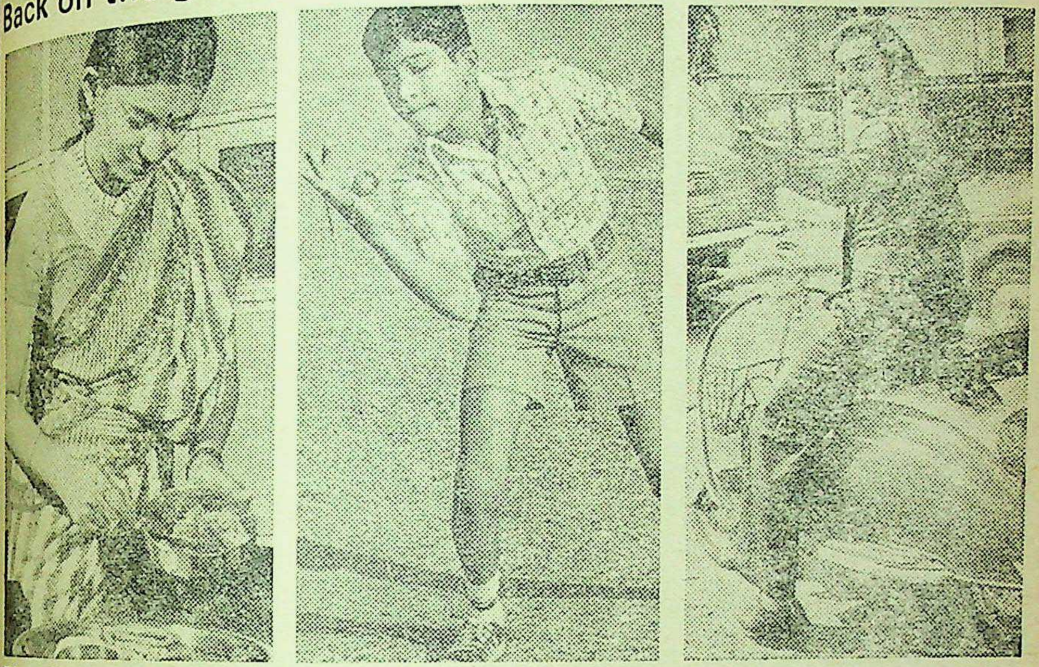
The reason for there being no sugar in urine despite elevated blood sugar is due to a raised renal threshold for glucose. This is not an uncommon finding. It may occur without any cause also occasionally. More often it is due to diabetic nephropathy or old age itself producing nephrosclerosis.

Management in such cases is indeed a problem. We can however depend on symptomatic improvement and also look for symptoms of hypoglycaemia. Whenever possible, blood sugar estimations should be done. In view of the age of your patients and tendency to ischemic heart disease, it is wiser to give smaller doses, if in doubt. Finally urine examination does still have some part to play since if sugar goes grossly out of control, the urine might reflect the changes.

Diabetes Research Centre
5—7, Main Road,
Madras—600 013.

Prof. M. Viswanathan, M.D.,

Back on the go again



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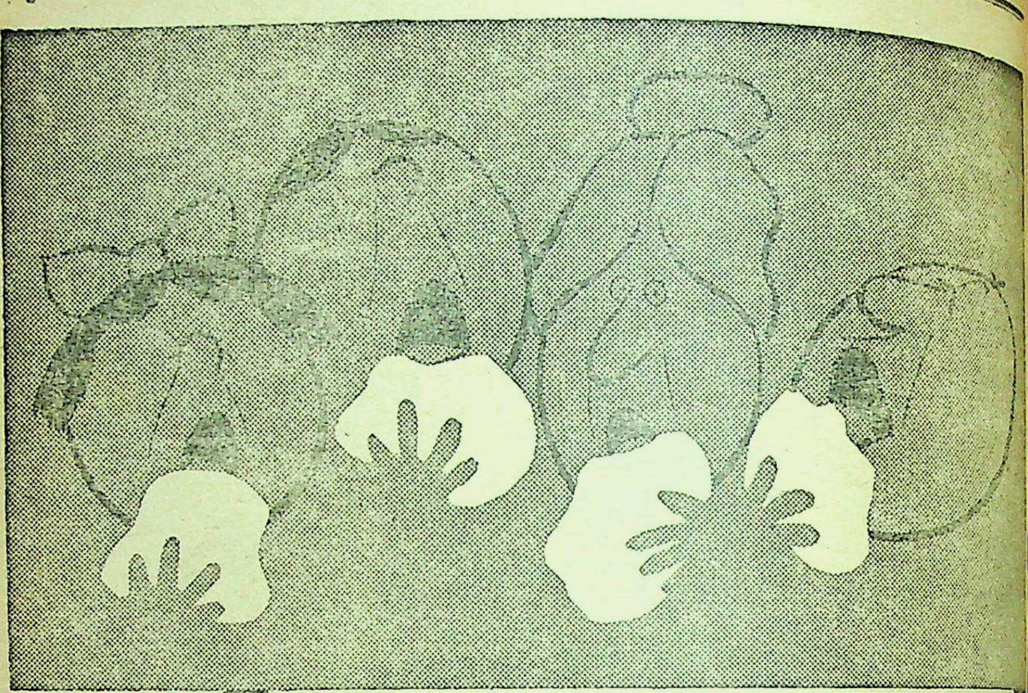

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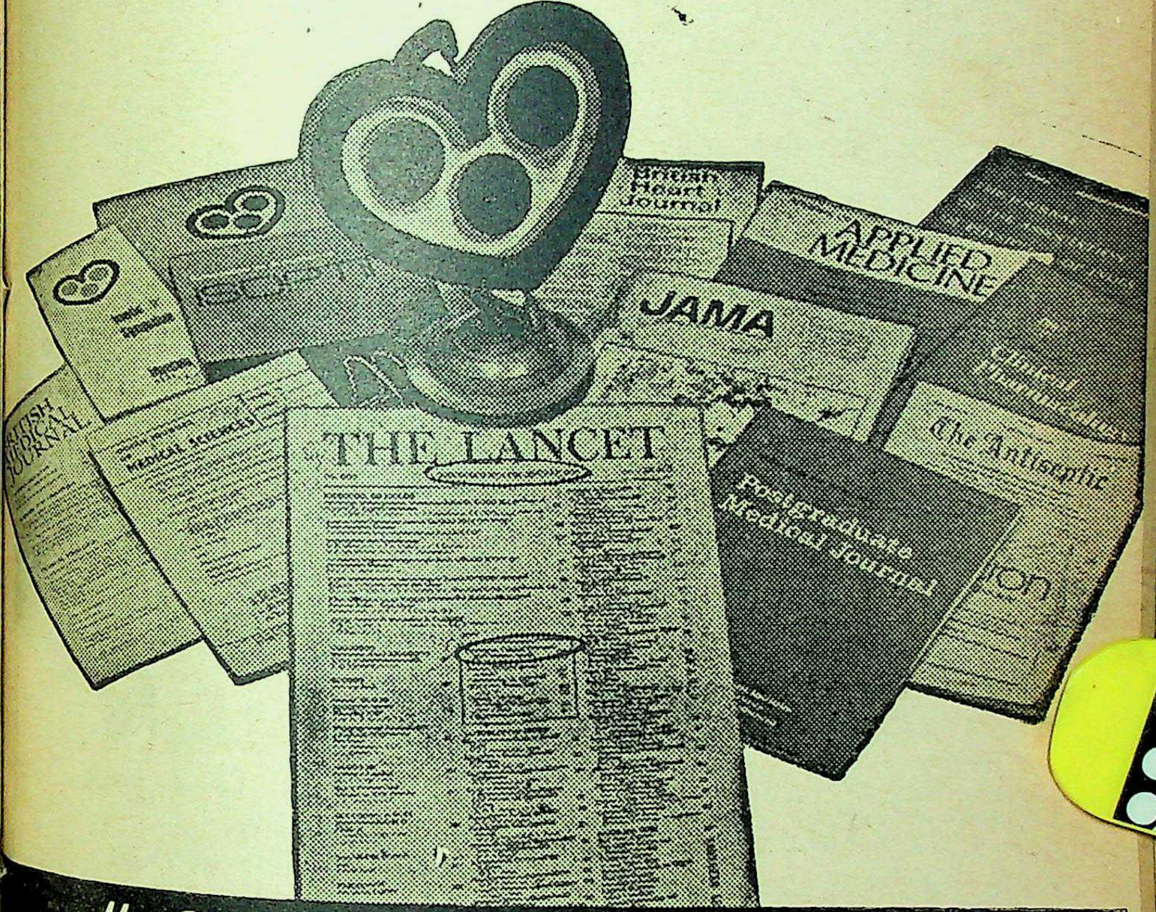
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Leader, Lancet, 1977, i, 229

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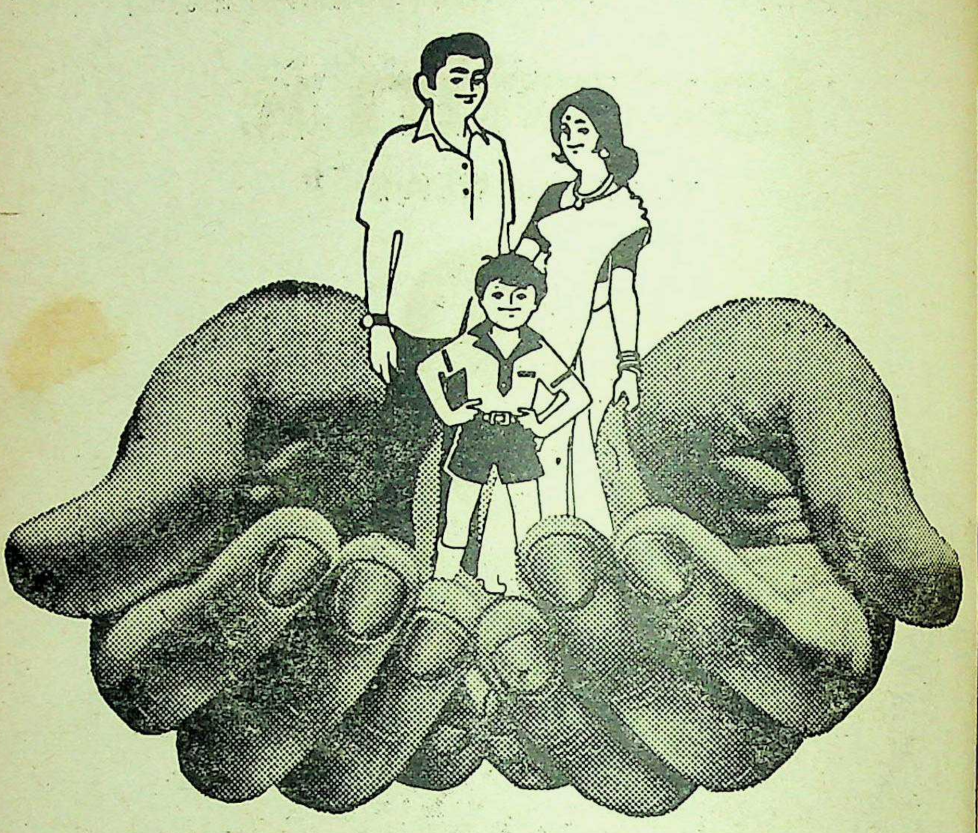

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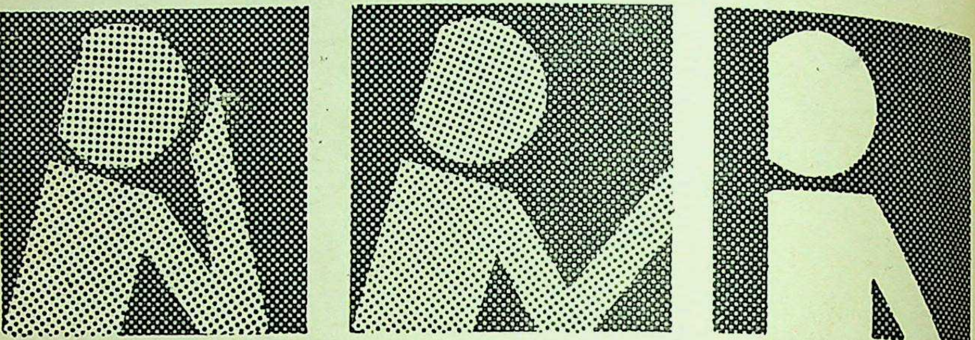

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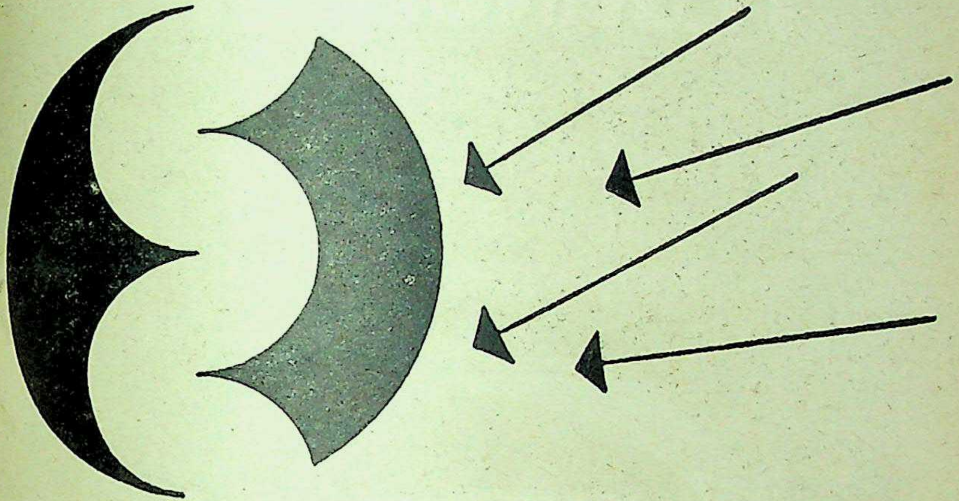

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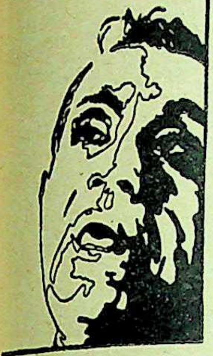

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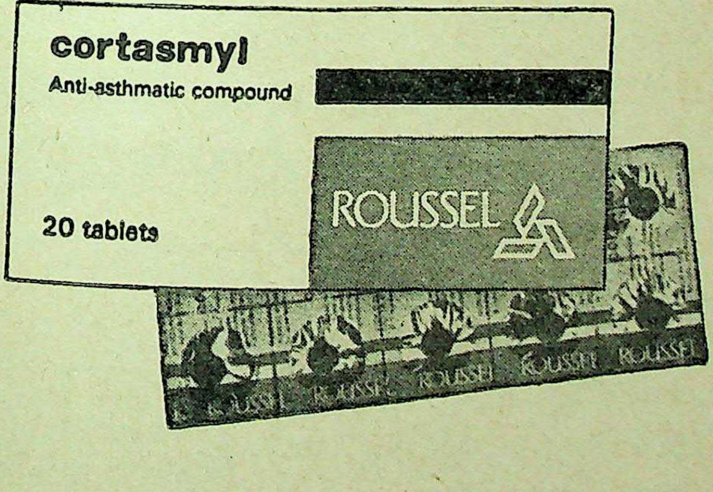
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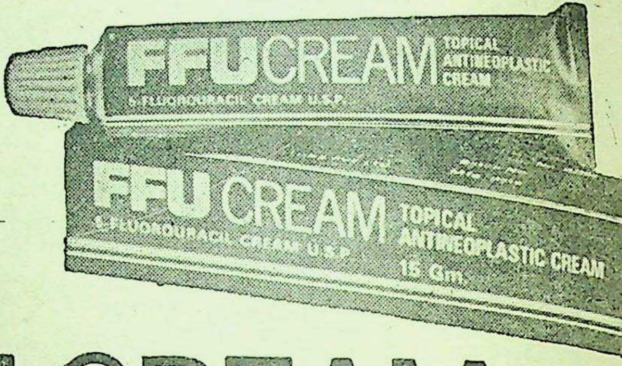
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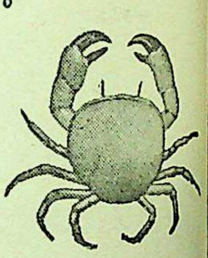

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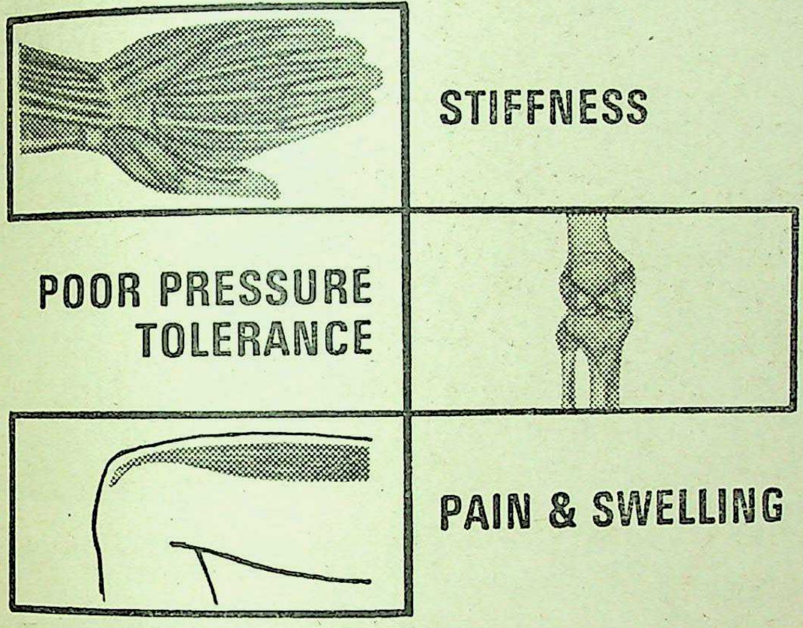
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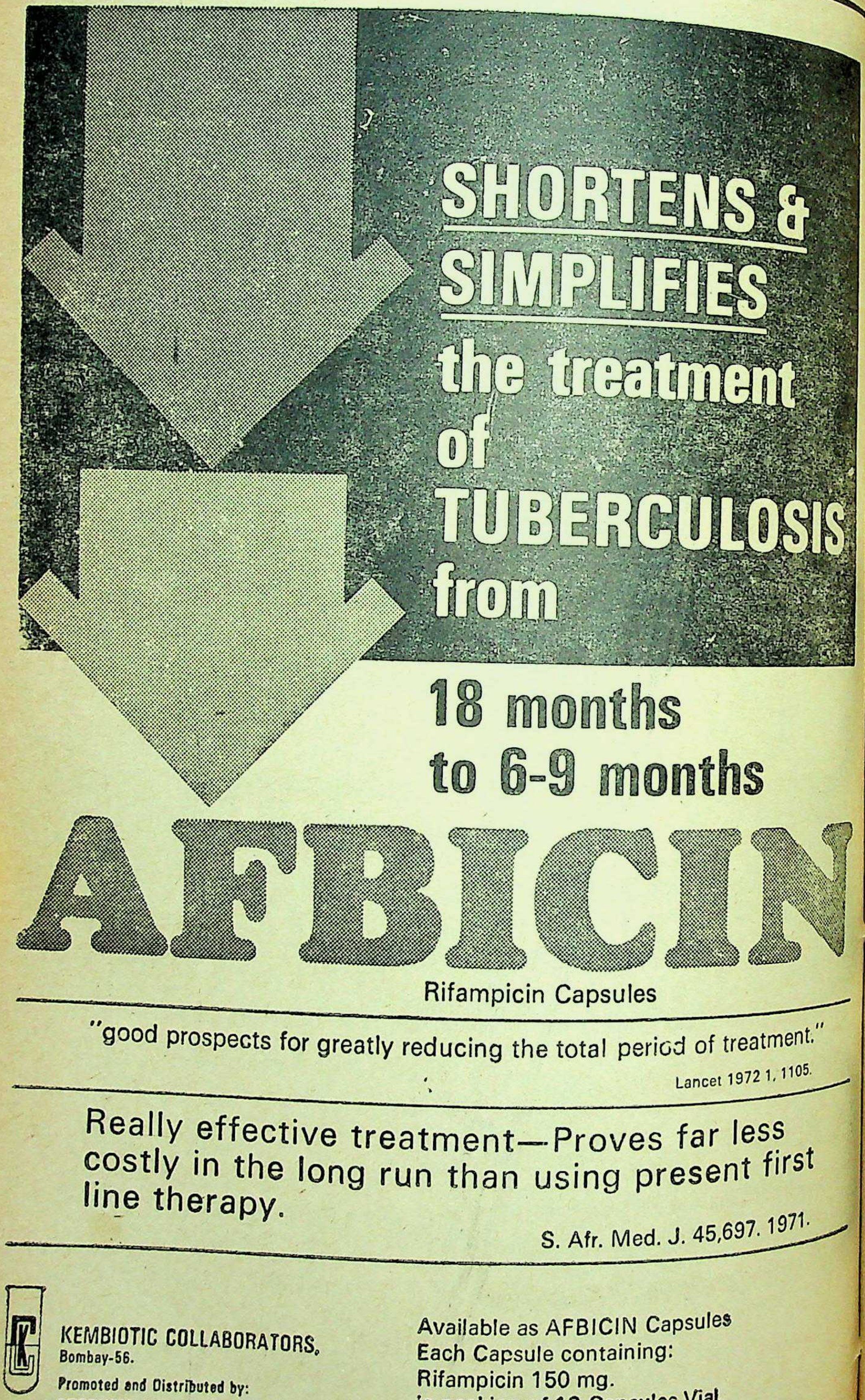

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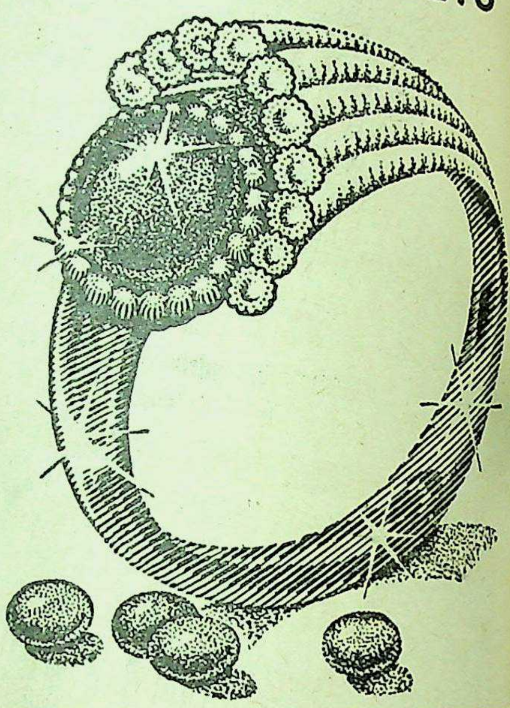

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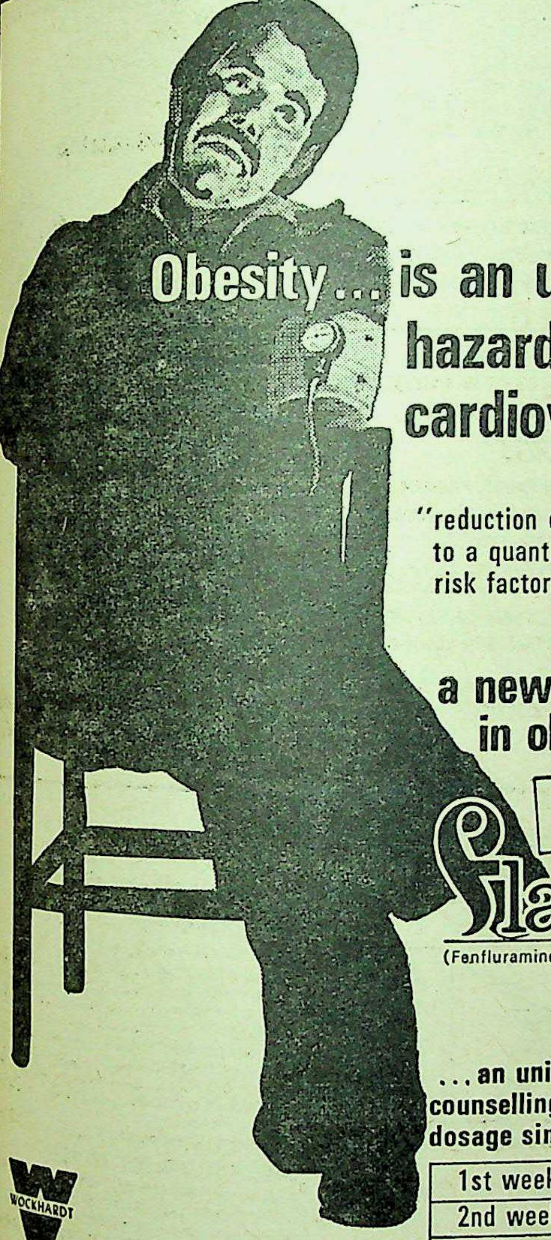

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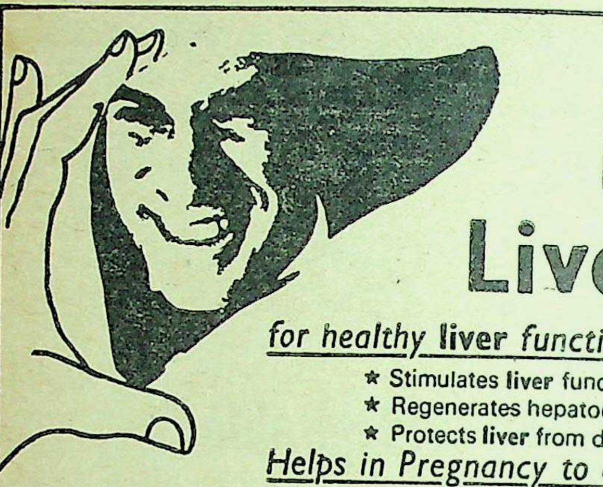

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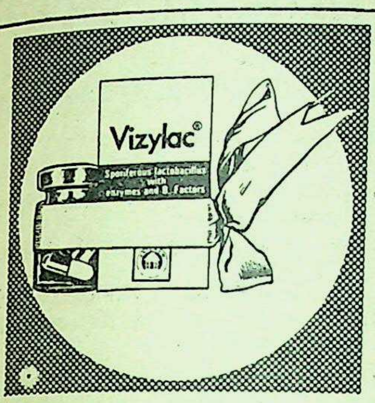
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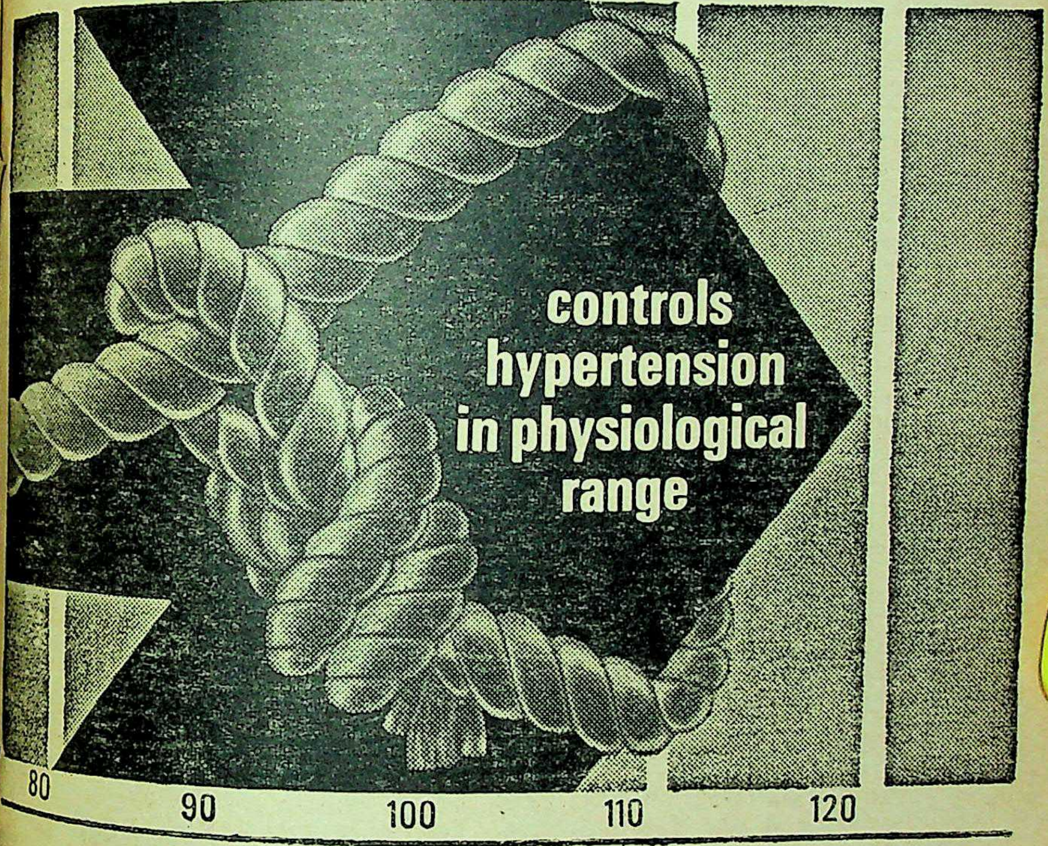
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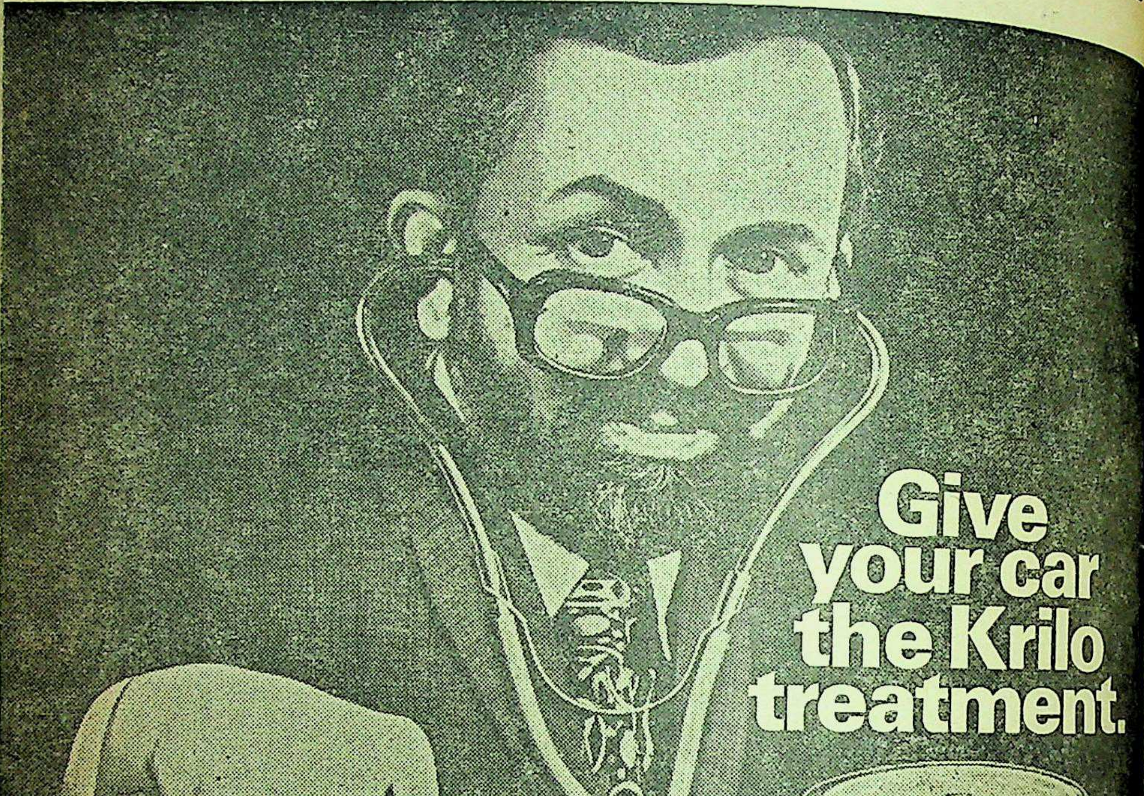

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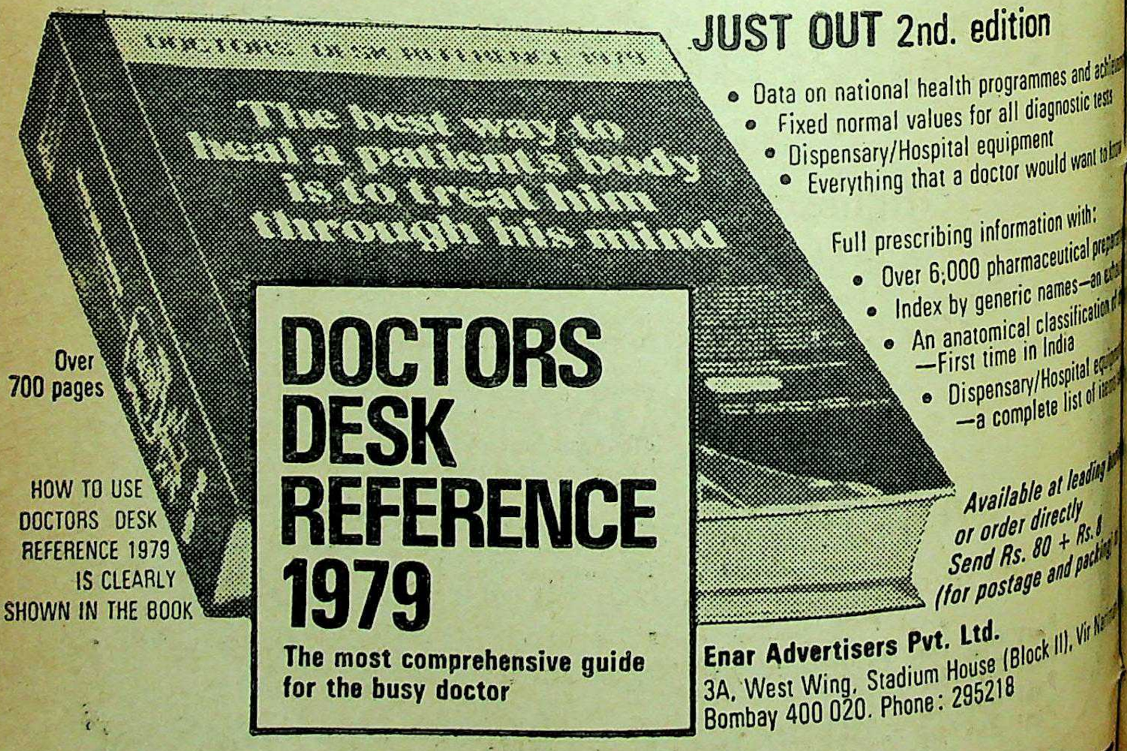

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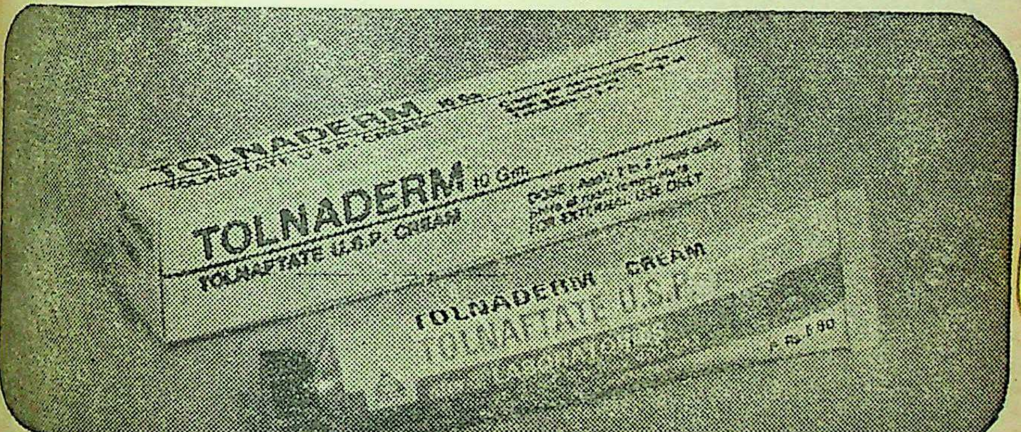

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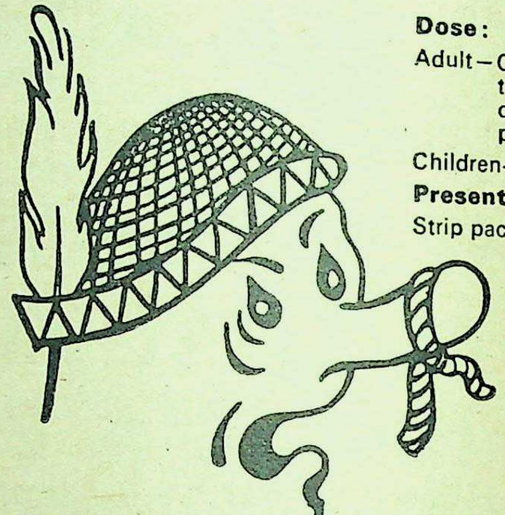

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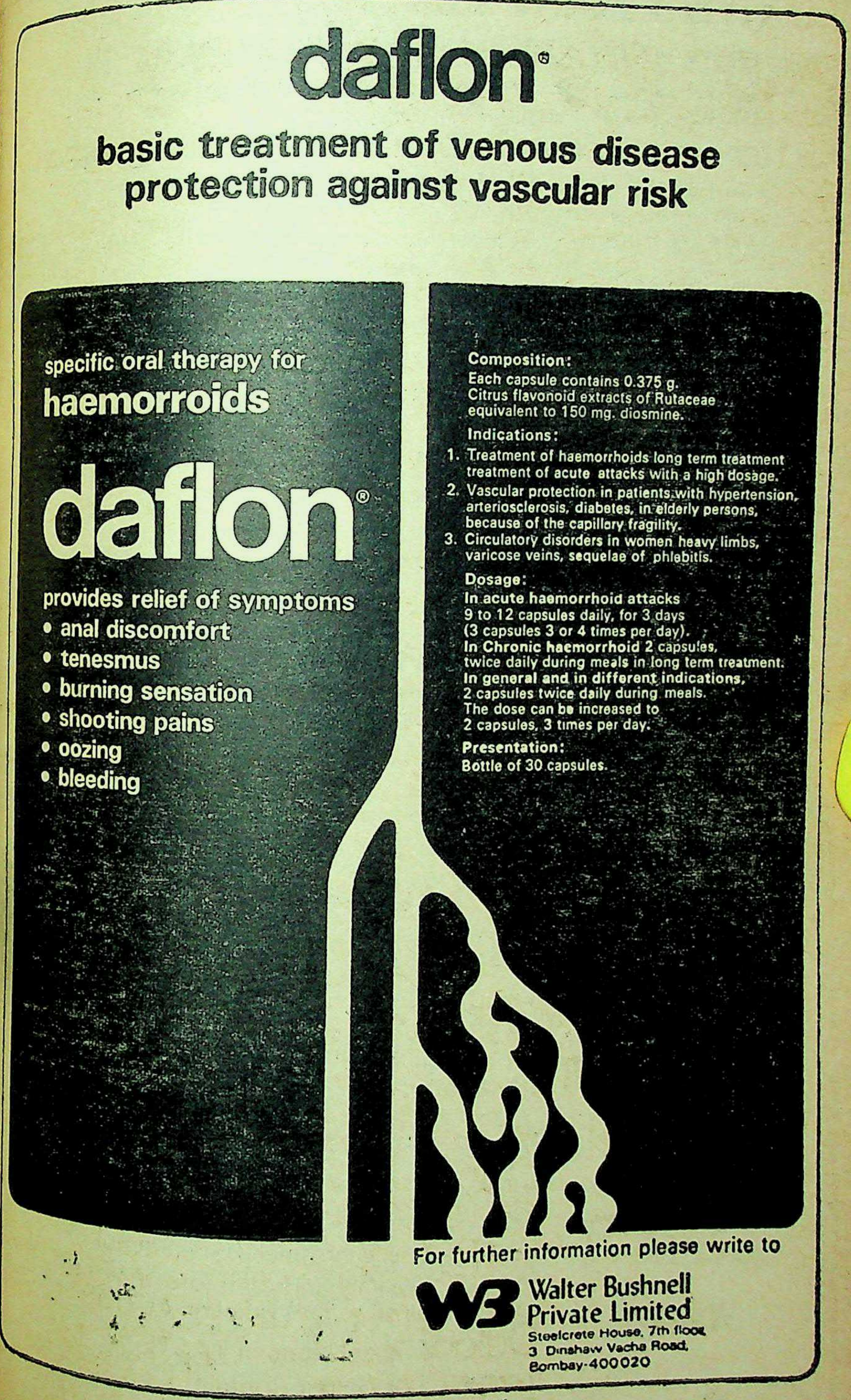

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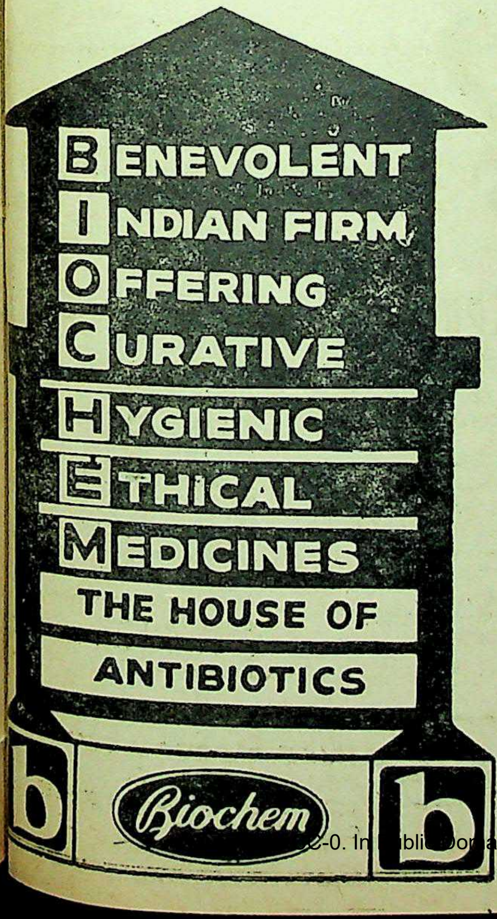

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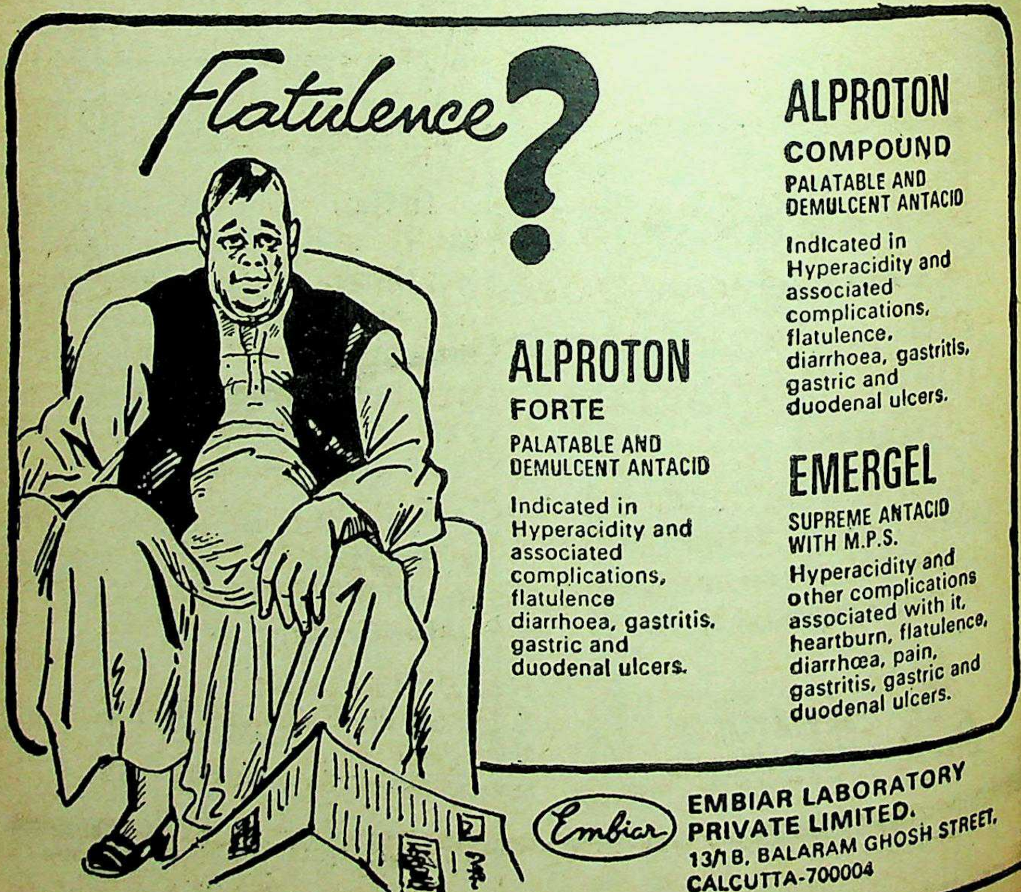
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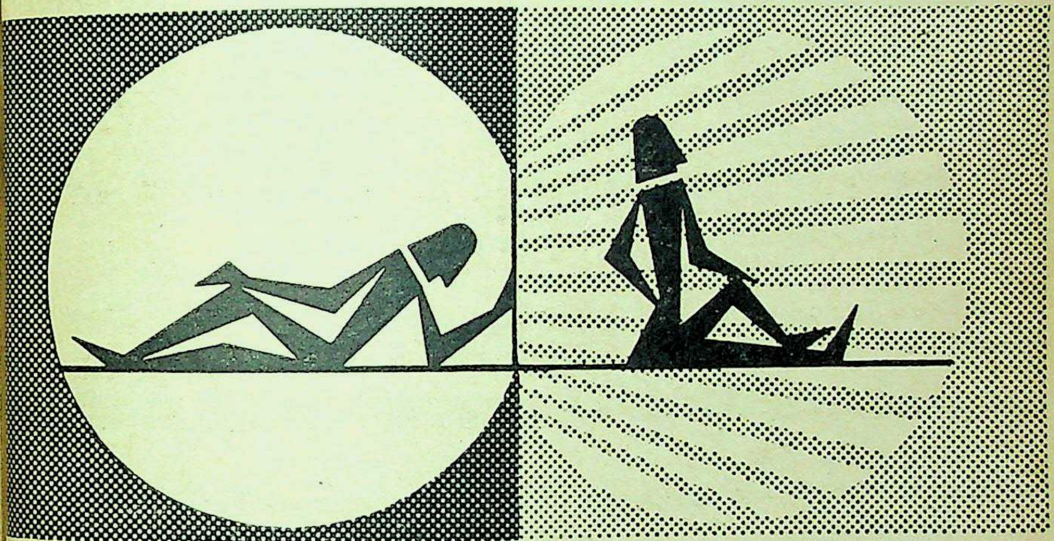

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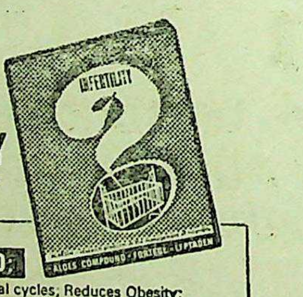

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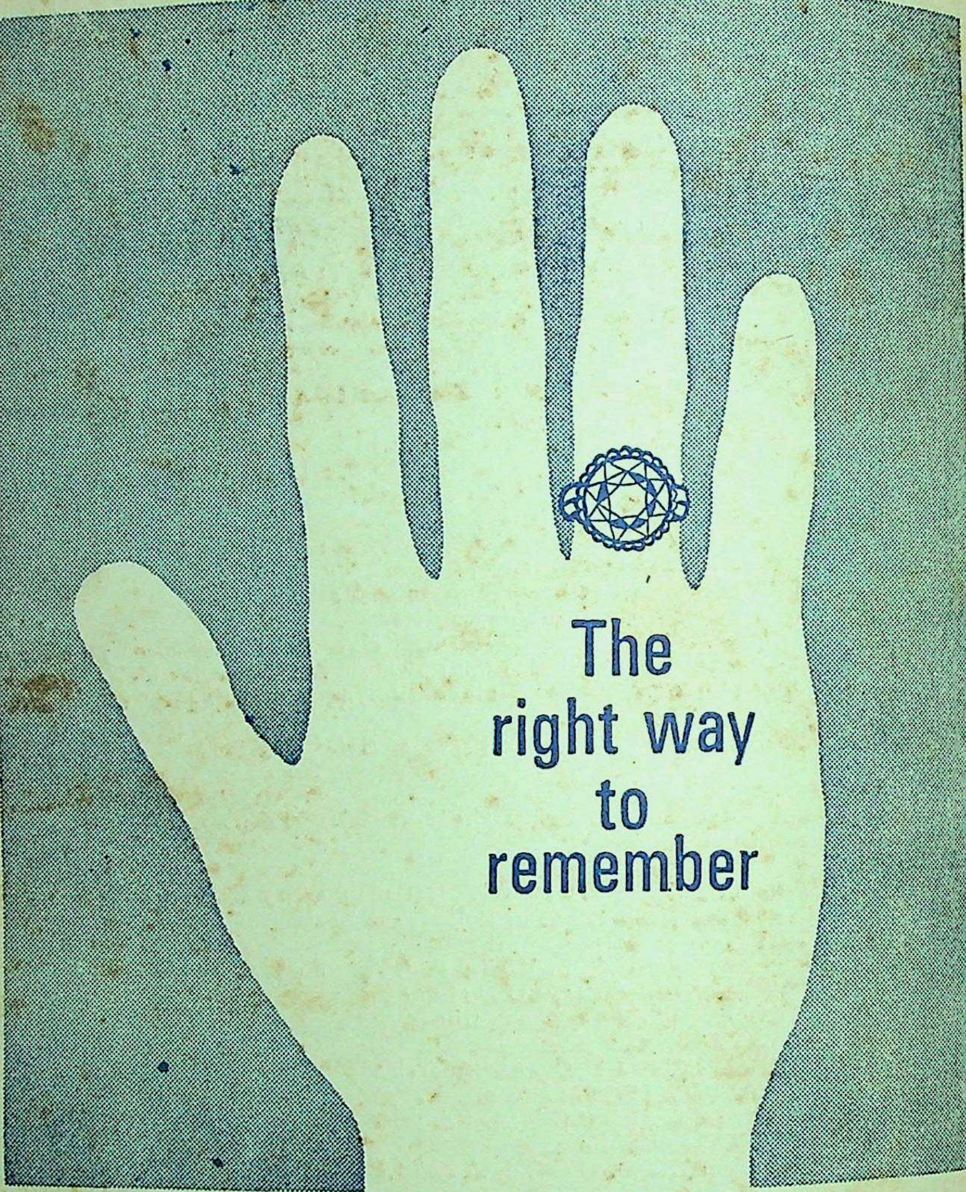
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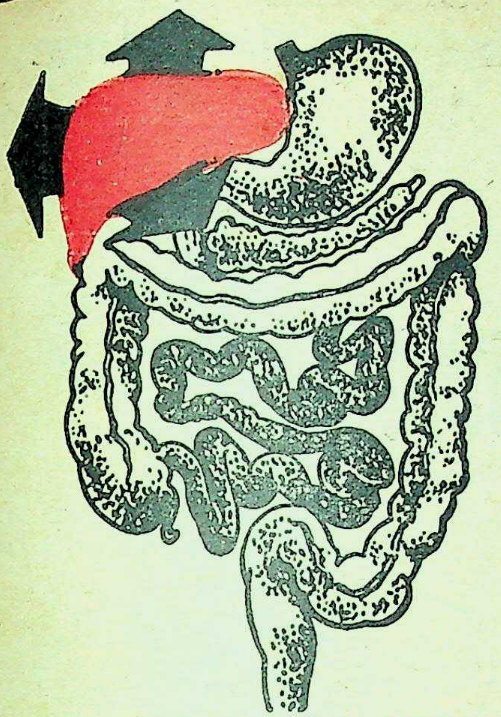

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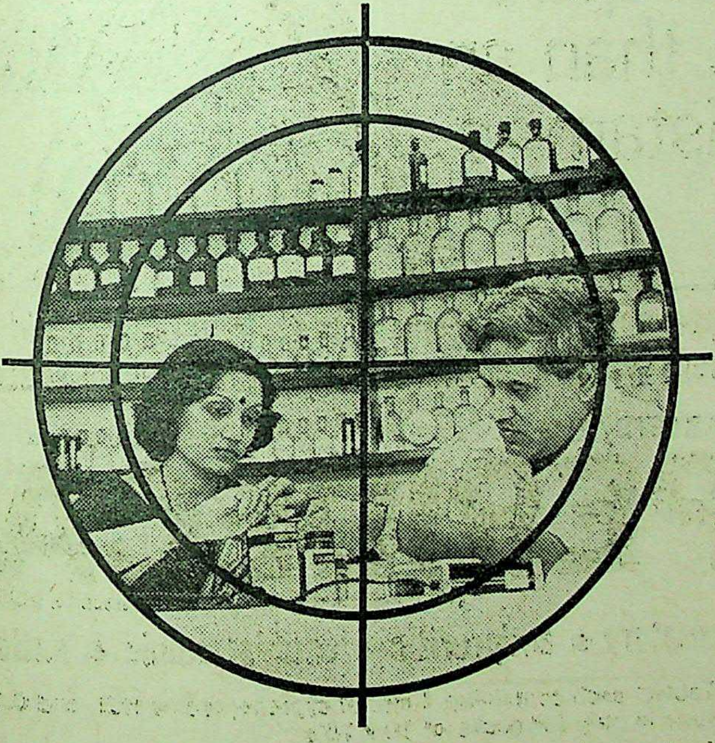

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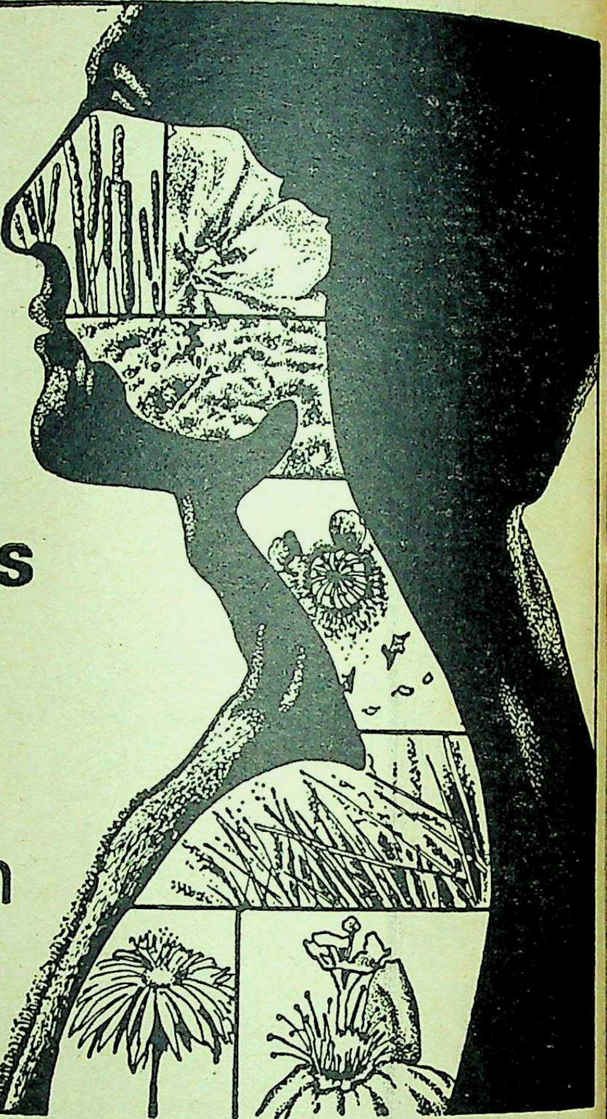

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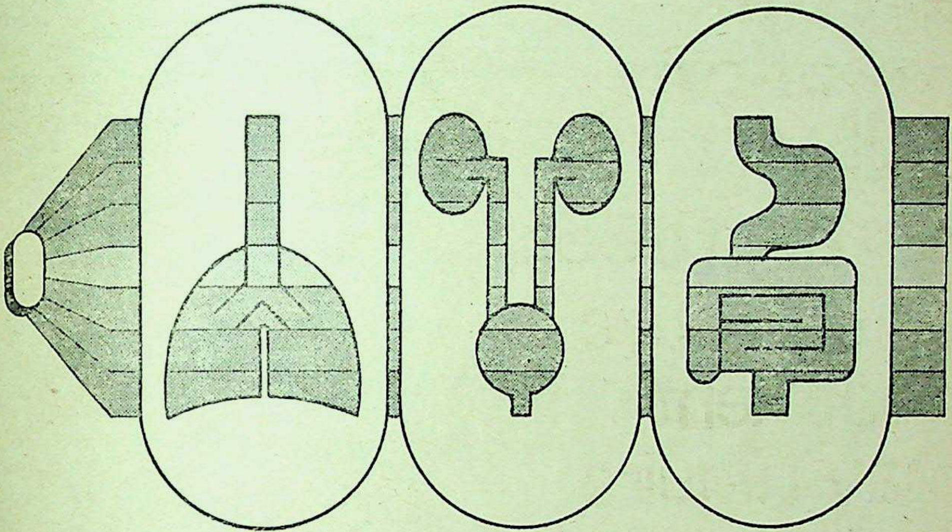

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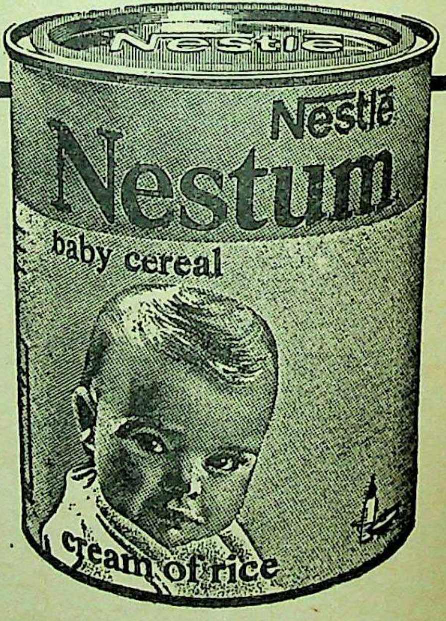

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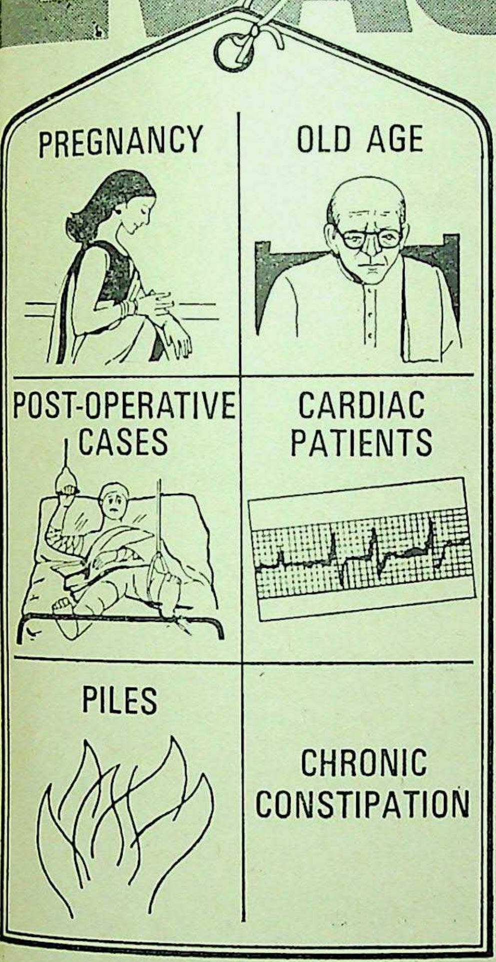

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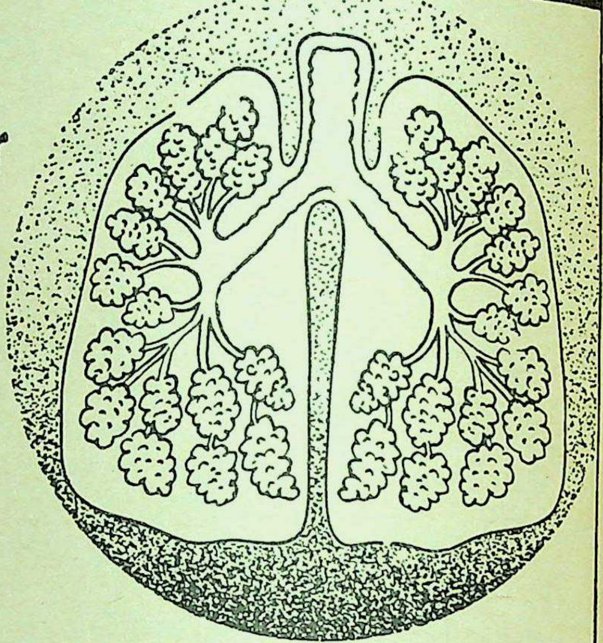

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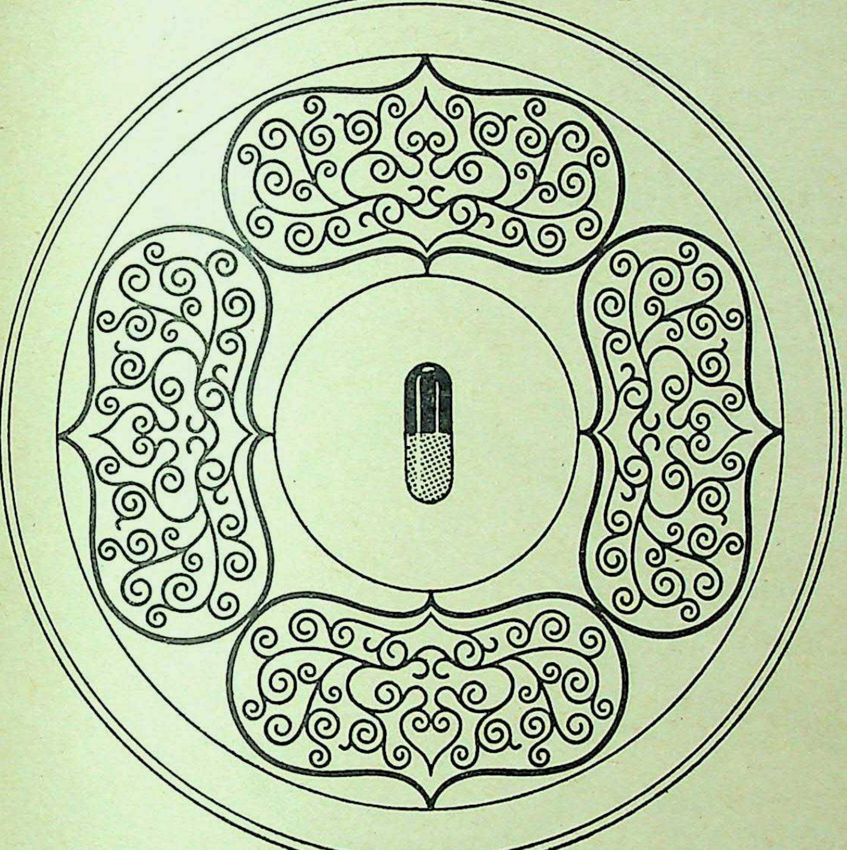

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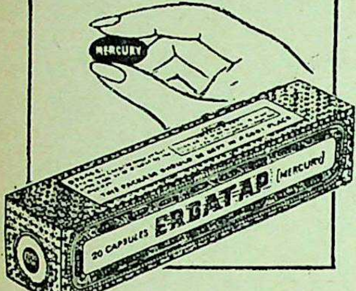

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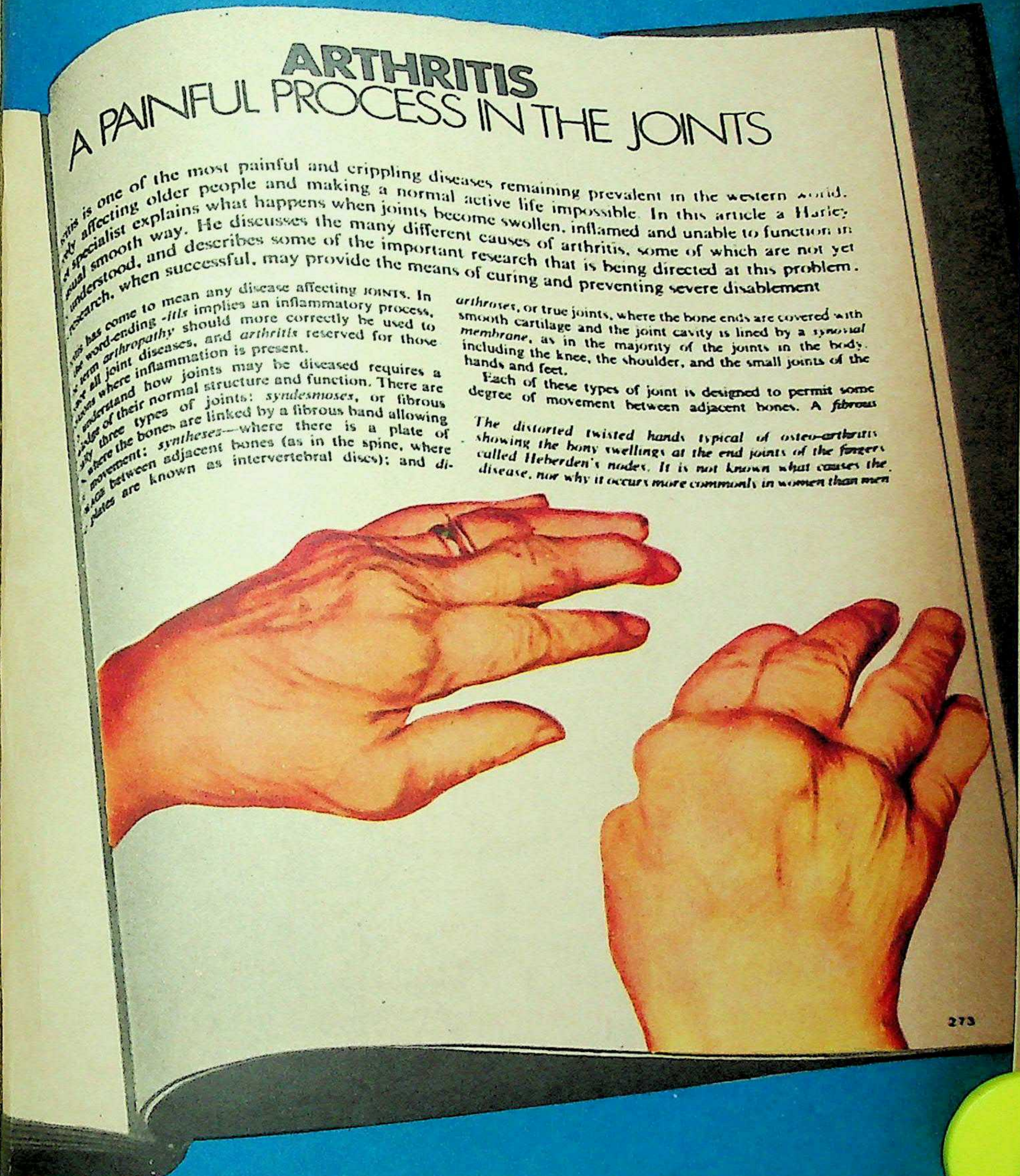

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itis has come to mean any disease affecting JOINTS. In he word-ending *-itis* implies an inflammatory process, term *arthropathy* should more correctly be used to all joint diseases, and *arthritis* reserved for those ses where inflammation is present.

understand how joints may be diseased requires a ledge of their normal structure and function. There are ly three types of joints: *syndesmoses*, or fibrous where the bones are linked by a fibrous band allowing movement: *syntheses*—where there is a plate of space between adjacent bones (as in the spine, where plates are known as intervertebral discs); and *diarthroses*, or true joints, where the bone ends are covered with smooth cartilage and the joint cavity is lined by a *synovial membrane*, as in the majority of the joints in the body, including the knee, the shoulder, and the small joints of the hands and feet.

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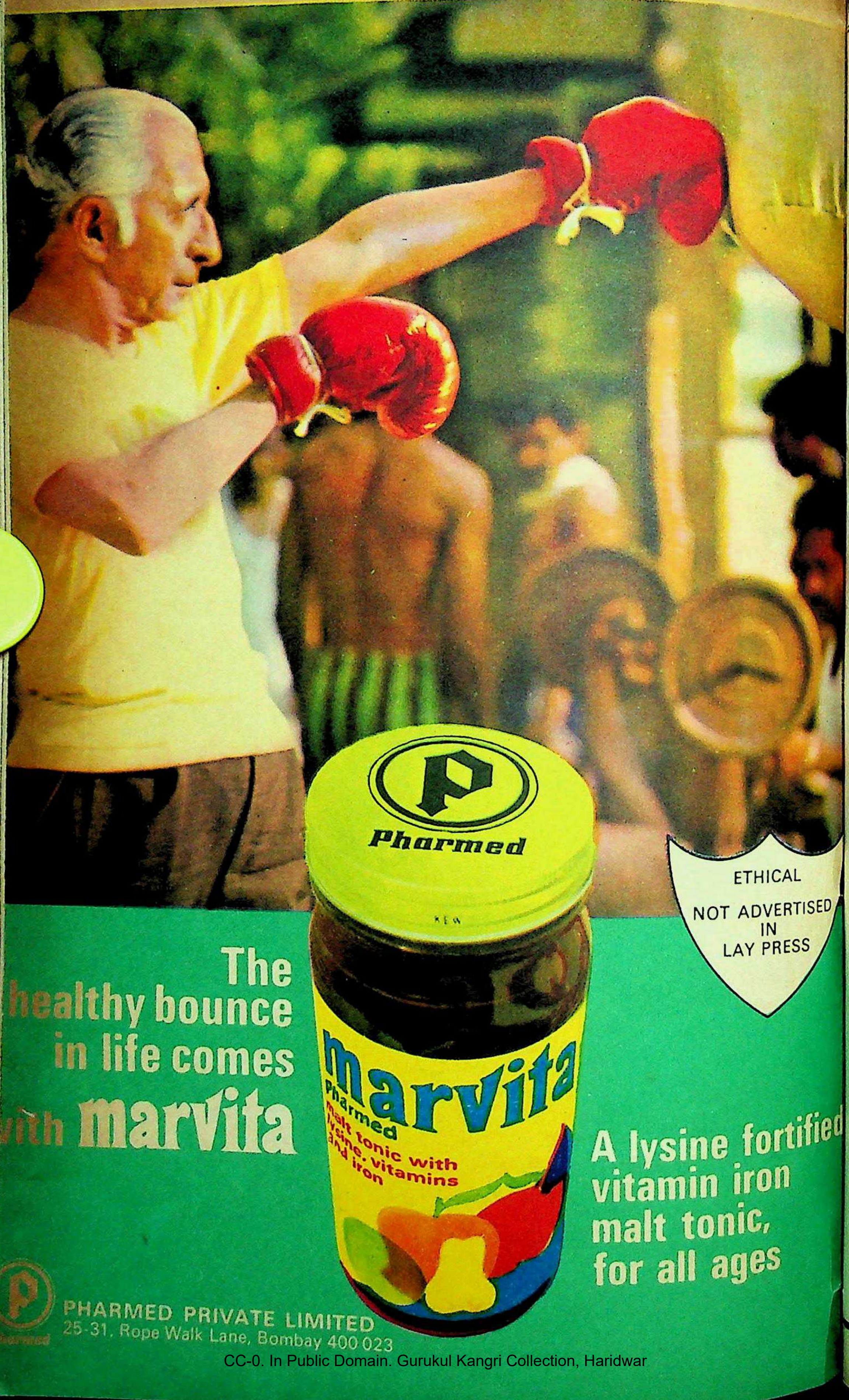
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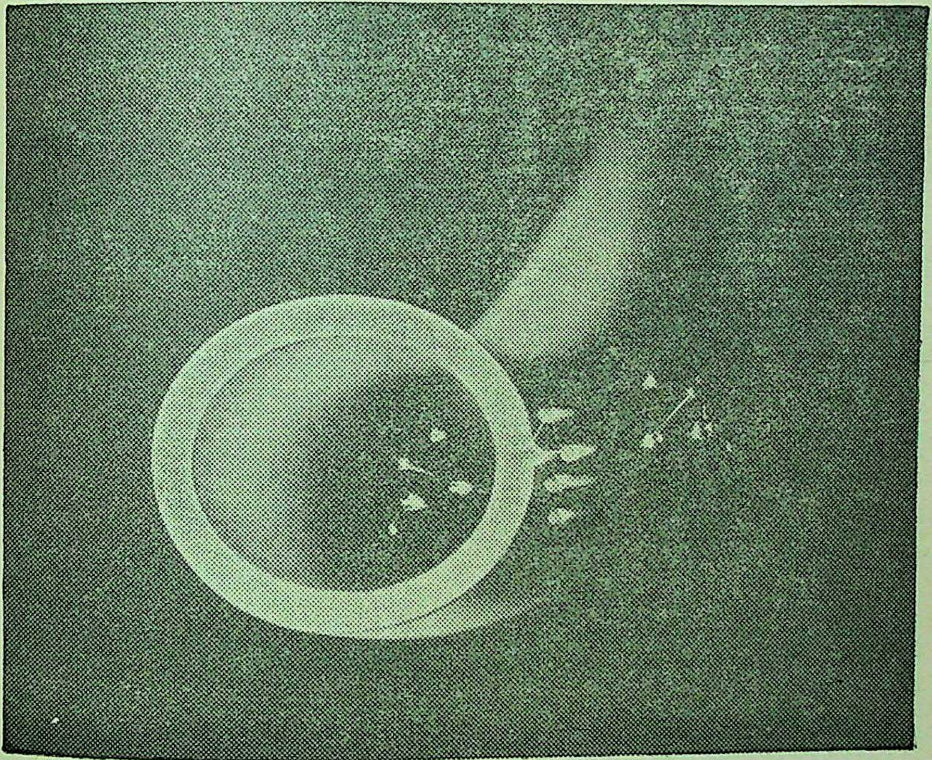

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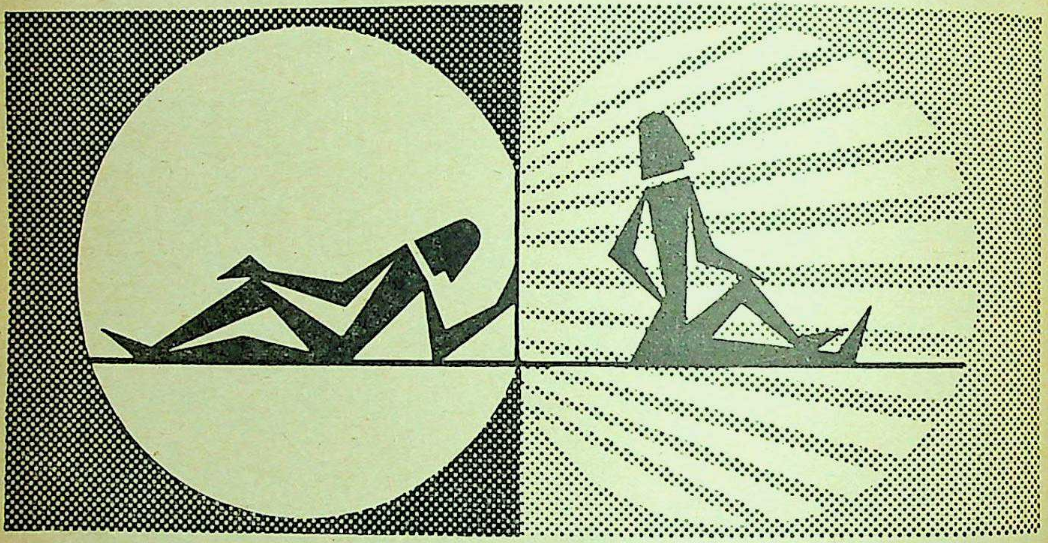

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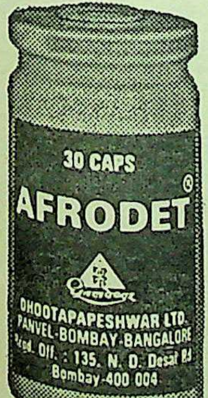
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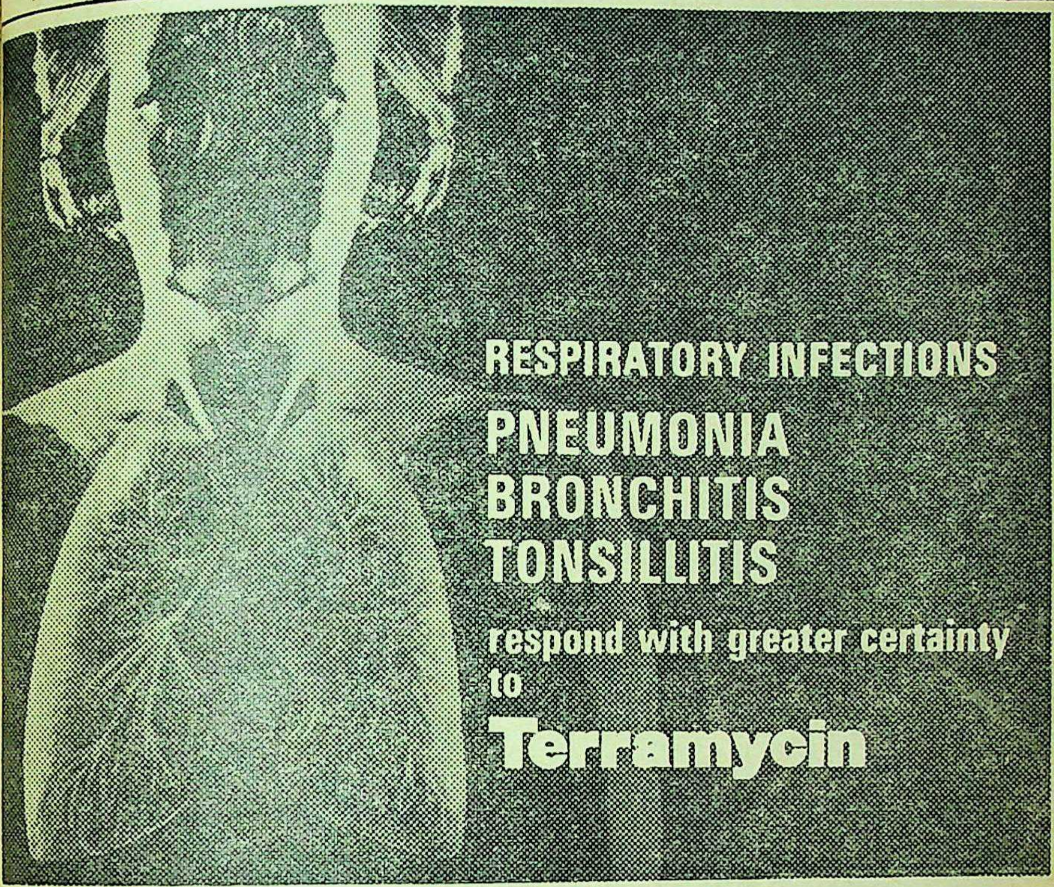
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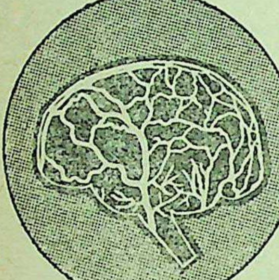

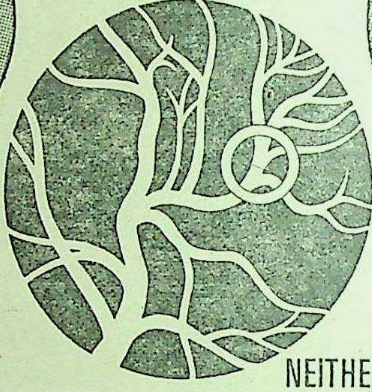

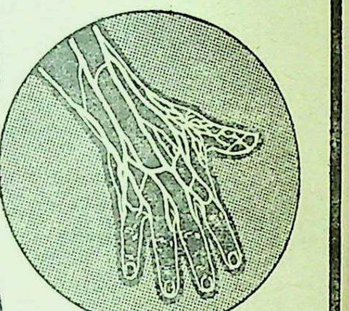

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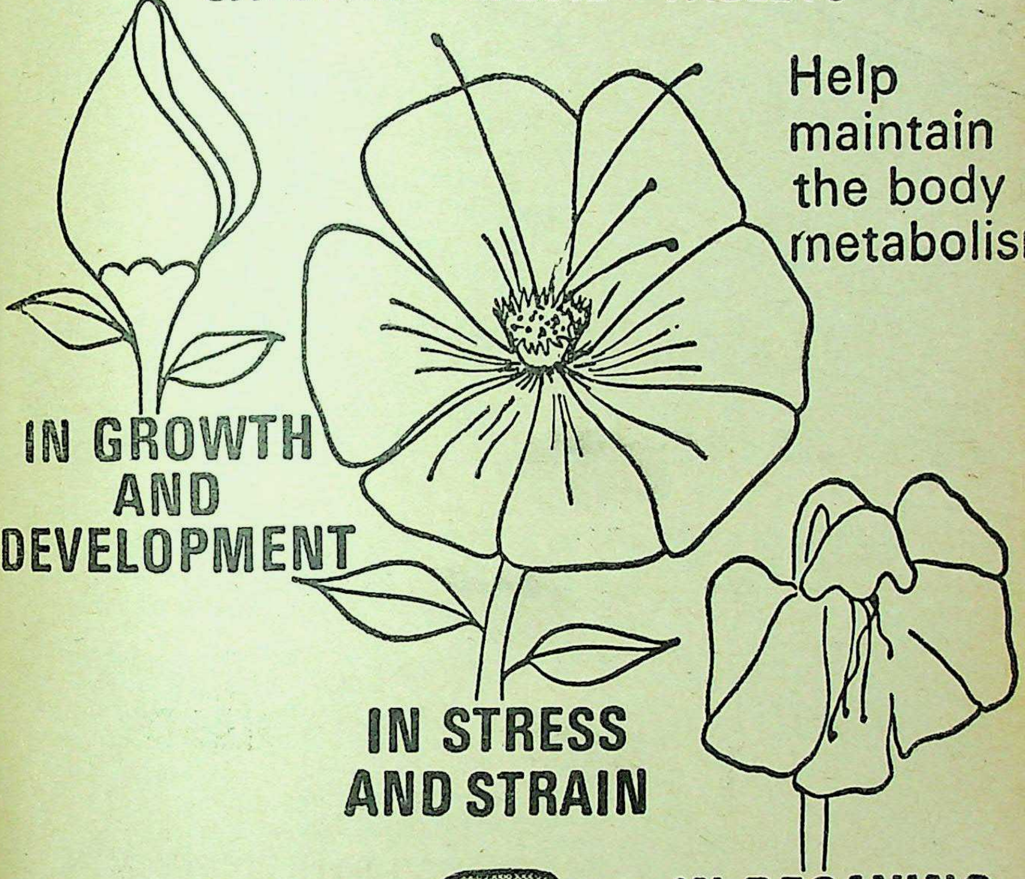
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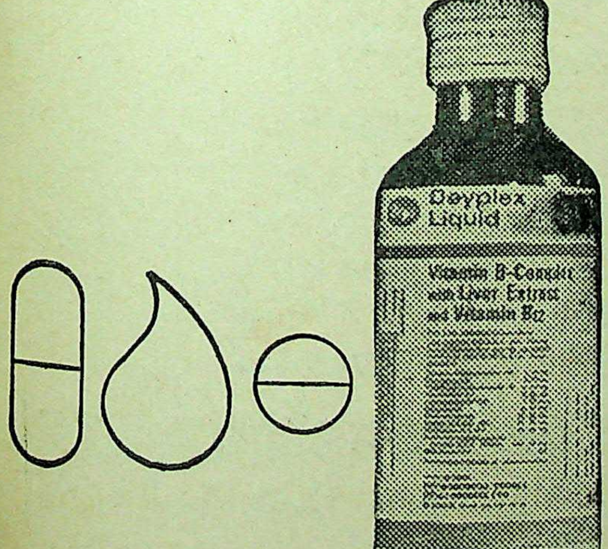
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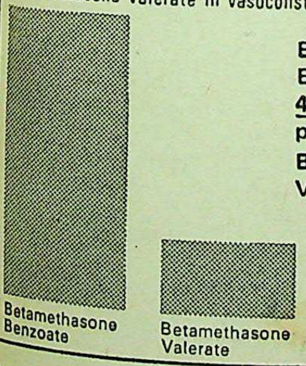

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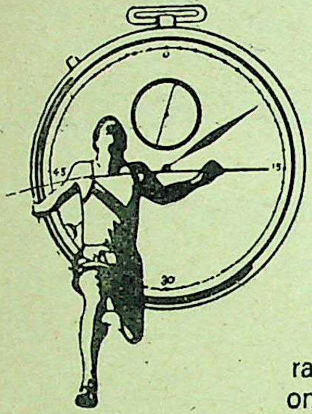

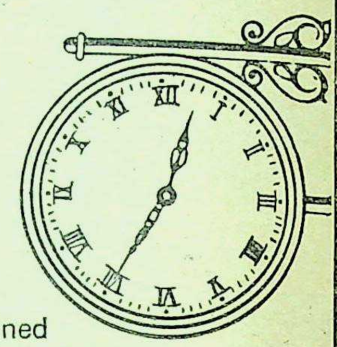

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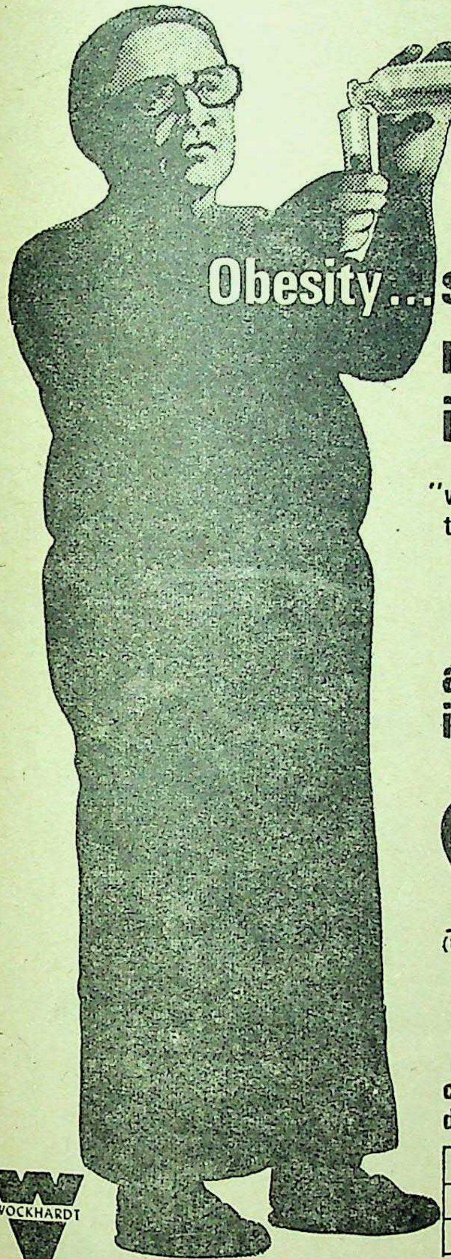

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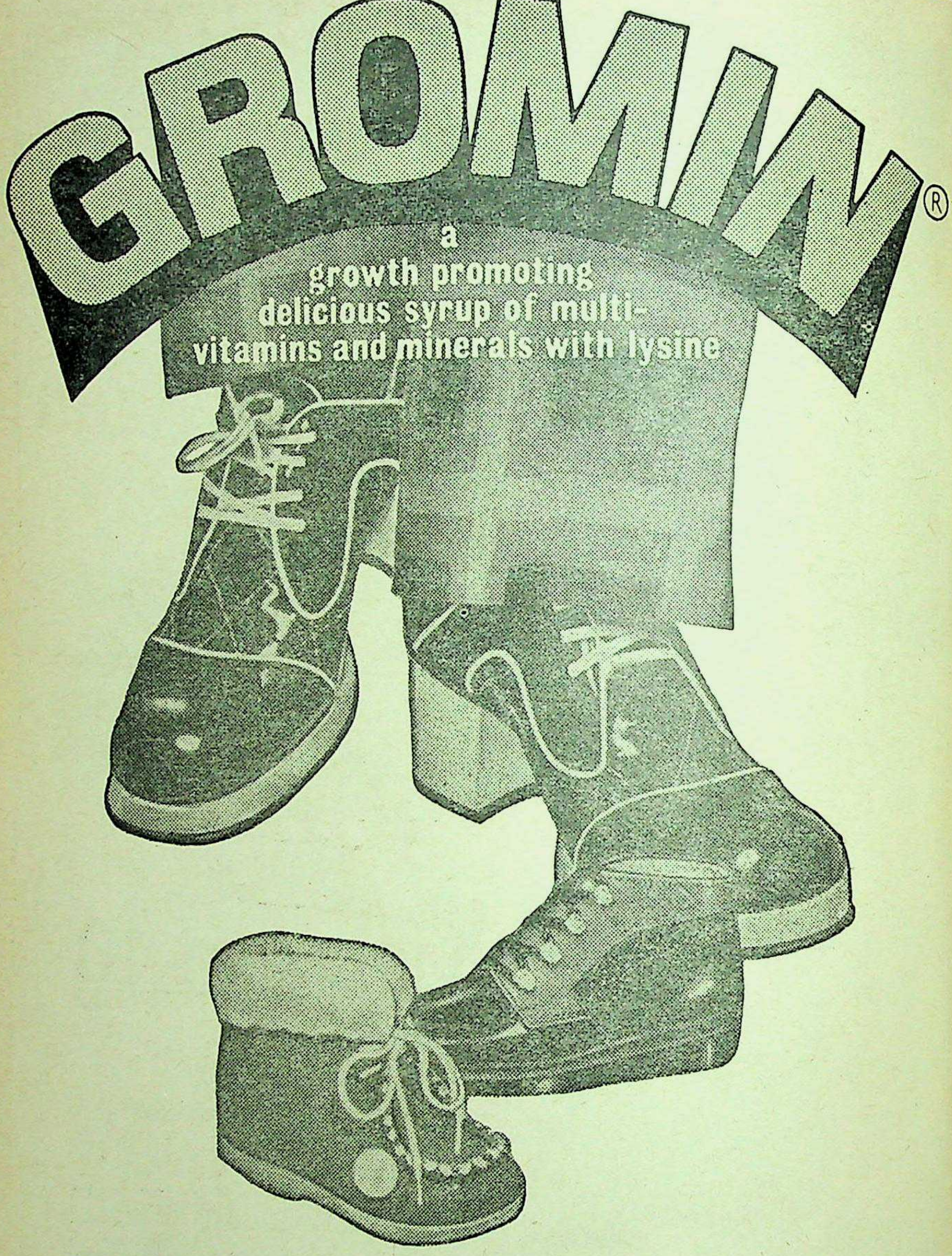
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Original Articles

NEEDLE BIOPSY OF LIVER*

(A Report of a Study of 162 Cases)

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Introduction.—Needle biopsy is indicated in several diseases of the liver and has been of undoubted value as a diagnostic aid to the clinician. It has a mortality rate of 0·3% and morbidity rate of 1%.

The first liver biopsy was undertaken by Paul Ehrlich[9] in 1883 (Sherlock, S. 1968).[15] Subsequently there have been reports of liver biopsy studies by many workers (Gillman and Gillman 1945,[6] Popper and Franklyn (1948),[11] Iverson and Roholm (1939),[6] Sheila Sherlock (1962),[16] Richard Terry (1952).[13] Weisbred *et al* 1956).[18] Reports of liver biopsy studies from India are not many. Victor (1970)[17] analysed the liver biopsy studies of 525 cases of hepatomegaly. Bayliss and Sahadevan (1965)[2] published the results of 56 liver biopsy studies in jaundice.

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* Specially contributed to the 'ANTISEPTIC'

The present study was undertaken to find out the pattern of liver disorders in one teaching hospital in Rayalaseema (Andhra Pradesh) to correlate the clinical picture with histopathological changes, and to assess the failure rate and complications of needle biopsy of liver.

Material and methods.—A study of liver biopsy was undertaken during the period from January 1969 to March 1975 (over a period of 6 years and 3 months); the biopsy was done on 162 cases.

Biopsy was done only in patients admitted in one medical unit and was performed with Vim Silverman needle (Upto December, 1973) and with Menghini needle, (From January, 1974).

TABLE I

Total number of biopsies ...	162
Number of biopsies done with Vim Silverman needle ...	114
Number of biopsies done with Menghini needle ...	48

All precautions were taken to prevent complications. Patients were put on Vitamin K injections (10 mg.) for 3 days before biopsy. One bottle of compatible blood was kept in reserve and patients were observed for 24 hours after biopsy for any complications. Intercostal route was adapted in all the cases. The extracted bit was immediately put in 10% formol saline and sent for histopathological study.

During the period, the number of cases that were admitted to the Unit, the percentage of cases with liver diseases are as follows:—

TABLE II

Showing the number of admissions and percentage of liver diseases

Year	No. of admissions			No. of cases of liver disease			% of liver diseases
	Male	Female	Total	Male	Female	Total	
1969 ...	896	314	1,210	87	27	114	9·4
1970 ..	774	356	1,130	89	31	120	10·6
1971 ...	672	309	981	72	27	99	10·0
1972 ...	705	238	943	82	28	110	10·6
1973 ...	623	287	910	69	15	84	9·2
1974 ...	642	352	994	79	25	104	10·4
1975 ... (upto March)	232	49	281	26	6	32	11·4

Total No. of admissions (From January, 1969 to March, 1975)	...	6,449
Total No. with liver diseases (do)	...	663
Total No. of males (do)	...	504
Total No. of females (do)	...	159
Percentage of liver diseases in admitted cases		10·2%

Of these cases liver biopsy was performed in 162. The age incidence is as follows:—

TABLE III

Showing the age incidence
(From January 1969 to March, 1975)

Age group in yrs.		Number of cases
11 to 20	...	33
21 to 30	...	37
31 to 40	...	48
41 to 50	...	33
51 to 60	...	9
61 to 70	...	2

TABLE VI

Showing the sex incidence

Total number of biopsies	...	162
Number of males	...	110
Number of females	...	52

TABLE V

Showing the failures

Total number of biopsies	...	162
Number of failures	...	22
Percentage of failures	...	12·3

Of the 162 biopsies performed, 22 were failures (no liver tissue, bit too small, blood clot) giving a percentage of 12% (12 3).

The failure rate was minimal with Menghini needle.

Failure rate with Vim-Silverman needle was 18·4% (21 out of 114. Biopsies).

Failure rate with Menghini needle 2% (1 out of 48 biopsies)

The failure rate of various workers is given (alongside) for comparison, as cited by Victor 1970.[17]

Failure rate of different workers

Hoffbauer	...	40%
Schiff (700 cases)	...	4·8%
Sherlock (1st 126 cases)	...	10%
(2nd 158 cases)	...	2%
Hoffbauer Evans & Watson		15%
Chairy, Flessinger & Roux		20%
Victor	...	10·4%

Complications.—No serious complications were encountered in the present series.

Out of 162 cases, 5 patients developed pleural rub (3% of cases) which disappeared within 48 to 72 hours.

TABLE VI

Showing the conditions for which biopsy was done

1	Cirrhosis of liver	...	73
2	Viral hepatitis	...	34
3	Malignancy (Primary and secondary)	...	11
4	Amoebic hepatitis	...	7
5	Hepatosplenomegaly of obscure origin	...	31
6	Leukæmia	...	1
7	Miscellaneous	...	5
(i)	Nephrotic syndrome	...	2
(ii)	Hæmolytic anæmia	...	1
(iii)	Constrictive pericarditis	...	1
(iv)	Amyloidosis	...	1
	Total	...	162

TABLE VII

Showing the histopathological report obtained in the study

1	Cirrhosis	...	36
2	Viral hepatitis	...	31
3	Malignancy	...	3
4	Tuberculosis of liver	...	3
5	Leukaemia	...	1
6	Focal hepatitis	...	6
7	Fatty changes	...	19
8	Non-specific changes*	...	41
9	Failures	...	22
	Total	...	162

* (Non specific changes - Periportal fibrosis found cell infiltration, mild mesenchymal reaction, foamy cells, distended sinusoids).

To assess the value of biopsy a study was made to correlate the clinical diagnosis and the histopathological diagnosis.

TABLE VIII

Showing the comparison between clinical and histopathological diagnosis

S. No.	Type of cases	No. of cases where biopsy was was done	No. of cases where biopsy confirmed the diagnosis	Percentage
1	Cirrhosis ...	73	36	49 3
2	Viral hepatitis ...	34	31	91·2
3	Malignancy (Primary & Secondary)	11	3	27·3
4	Amoebic hepatitis ...	7	0	—
5	Hepatosplenomegaly ...	31	11	35·5
6	Leukaemia ...	1	1	100
7	Miscellaneous ...	5	—	—
	(*i*) Nephrotic syndrome — 2			
	(*ii*) Hæmolytic anaemia — 1			
	(*iii*) Amyloidosis — 1			
	(*iv*) Constrictive pericarditis — 1			

TABLE IX

Showing the results of the biopsies

No. of cases in which diagnosis was confirmed ...	69
No. of cases in which diagnosis was established ...	27
Nil conclusive biopsies including failures ...	66
Total ...	162 cases

Discussion.—From Table IX (alongside) liver biopsy was helpful in confirming the clinical diagnosis in 69 out of 162 cases (42·6%) and establishing a diagnosis of 27 cases (16 7%). It was inconclusive in 66 cases, which includes 22 failures.

The commonest condition met with was cirrhosis of liver. The diagnosis was confirmed in 36 out of 73 cases, in which a clinical and biochemical diagnosis of cirrhosis of liver was made. In 73 patients with cirrhosis of liver in whom biopsy was done, only frank cases with ascites, splenomegaly, evidences of portal hypertension, with or without hepatomegaly and with biochemical evidences of liver cell dysfunction were selected, as definite clinical diagnosis could not be made in early stages. In two cases, in which the clinical diagnosis was not made, biopsy was helpful in establishing a diagnosis. The types of cirrhosis made out are as follows:—

Portal cirrhosis	16
Post necrotic	2
Post hepatitic with fibrosis	1
Cirrhosis where no definite classification could be given	17

The histological criteria for diagnosis of cirrhosis of liver are according to those of Scheuer 1968.[10] In portal or micronodular cirrhosis the nodules are small and uniform approximately of the size of a lobule with few or no recognisable efferent veins or portal tracts. In the post necrotic type the nodules are larger, of varying size, lack in portal and central structures. They are separated by broad fibrous septa and areas of collapse. In post hepatitis cirrhosis much finer septa separate well differentiated nodules in which there is a semblance of lobular structure and in which portal tracts and efferent veins are identifiable. In 17 cases the bit was too small representing segments of regenerating or remaining liver tissue with fibrosis separating the nodules. In some of them the position of the central vein could not be made out and in some the central vein was not included in the bit. Hence it was difficult to give a definite classification as to the type of cirrhosis. Evidence of regenerating nodules was present in all cases.

One case of portal cirrhosis in the above series was associated with inferior vena caval obstruction. It can be observed from the above that the incidence of portal cirrhosis is much higher than that of post-necrotic type. This is also correlated by autopsy statistics of this institution. Moreover in portal cirrhosis the liver is diffusely involved and the lesion can be detected in any needle biopsy of a reasonable size. In macronodular cirrhosis large areas of liver are devoid of fibrous septa and may have a normal lobular structure. Hence in macronodular cirrhosis false negatives are common in biopsy studies (Scheuer 1968).[10] Prasantha Murty and Reddy 1973,[12] from an analysis of autopsy studies, found a high incidence (61·8%) of nutritional cirrhosis from Kurnool. Wig *et al* 1957[19] in a review of 62 cases of hepatic cirrhosis, postulated that hypoproteinaemia and dietary deficiency are important aetiological factors. In many series of North India, incidence of post necrotic cirrhosis is very high. Das-gupta and Mukherjee 1970[4], found post necrotic cirrhosis in 57 2% and nutritional cirrhosis in 42 8% in 45 cases analysed. All cases of nutritional cirrhosis gave a positive history of alcoholism. In a subsequent analysis of 210 cases, Mukherjee *et al* 1972[8], found post necrotic cirrhosis in 70%, nutritional cirrhosis in 16·2% and post hepatitic cirrhosis in 11·4%. Four cases of their series suffered previously from epidemic dropsy.

Khasliwal and Gupta 1963[7], in an analysis of 250 cases, noted that hepatotoxic agents were more important than malnutrition in the pathogenesis of cirrhosis and commented on the insignificant role of alcohol in our country. Sen Gupta *et al* 1956[14], postulated that, besides malnutrition, unhygenic living conditions unscientific dietary habits and improper medical care play an important role in the aetiology. In Aikat's (1975) series, macronodular cirrhosis was found in 60·4%, micronodular cirrhosis in 15·6%, and mixed type in 11·2%.

The role of viral hepatitis in the pathogenesis of cirrhosis is controversial. In cases analysed by Mukherjee *et al* 1972[8] a previous history of viral hepatitis was obtained in 30. In Khasliwal's series (1963[7]), in 48 out of 250 cases a past history of viral hepatitis was obtained. Chuttani *et al* 1966[3] in a five year follow up of 304 persons who suffered from acute hepatitis, and 1070 persons who were their family contacts in Delhi epidemic, did not come across a single case of cirrhosis of liver.

Viral hepatitis :—Biopsy was confirmatory in 31 out of 34 cases. Of the 3 cases, no liver tissue was obtained in one and in the other 2, the bit was insufficient for histopathological study. The biopsy findings were focal areas of liver cell necrosis, collection of inflammatory cells and mild mesenchymal reaction and bile stasis. As the pathology is diffuse it is unlikely to be missed at biopsy.

In the cases of hepatosplenomegaly due to various causes, diagnosis was established in 11 out of 31 cases (38·3%). It is interesting to note that 2 cases of cirrhosis which were not diagnosed clinically were diagnosed after biopsy. 5 cases showed fatty change and one case of diabetes with hepatomegaly showed increased glycogen content in liver along with fatty change. Other three were cases of tuberculosis.

Tuberculosis of the liver :—In 3 cases of tuberculosis of liver, all the patients presented with hepatosplenomegaly. One patient had miliary tuberculosis of the lungs. One case had axillary lymphadenitis and one patient presented with cachexia and irregular temperature.

Amoebic hepatitis :—Biopsy was done only in 7 cases where the diagnosis was based on the presence of tender enlarged liver which responded unequivocally to emetine therapy. Nonspecific changes were seen in the sections and no amœbæ were found.

Liver biopsy was not done in those cases where a definite abscess was made out and pus aspirated.

Malignancy.—(Primary and secondary):—These cases presented with hard nodular enlargement of liver. Malignant nodules could be made out clinically in all cases. Biopsy was done in all the 11 cases through the intercostal route and the diagnosis was established in three cases (27·2%). Two cases were primary carcinoma of liver, and the other was one of secondaries in a case of bronchogenic carcinoma. Probably a much higher percentage of positive results could have been obtained if the biopsy had been taken from the noduble proper. The incidence of the primary carcinoma of liver is particularly high in Andhra Pradesh. Murthy and Reddi 1973[12] found an incidence of 1 29% of primary carcinoma of liver in their autopsy studies which is higher than in most of the other parts of the country. 78·12%

of their cases of primary carcinoma were associated with cirrhosis.

Summary.—162 needle biopsies of liver are analysed (*i*) to find out the pattern of liver disorders in Kurnool (Andhra Pradesh) (*ii*) to correlate the clinical picture with histopathological changes, (*iii*) to assess the rate of failure and complications of needle biopsy of liver.

Biopsy was done in 162 out of the 663 cases of liver diseases who were admitted over a period of 6 years and 3 months.

The commonest cause of liver disease is cirrhosis; majority of which are portal cirrhosis. The next in frequency is infective hepatitis. Both these put together form the bulk of the liver disorders (107 of 162 cases biopsies).

Clinical correlation was maximum in infective hepatitis followed next by cirrhosis.

The failure rate was 12·3% (22 out of 162 cases) and there were no serious complications in our study.

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SPONTANEOUS ABORTION AND FETAL ABNORMALITY IN SUBSEQUENT PREGNANCY :

To test the hypothesis that a spontaneous abortion may be related to congenital abnormalities in the subsequent pregnancy. babies born to 510 mothers were studied. In 256 mothers whose previous pregnancy had ended in a spontaneous abortion, 17 infants had abnormalities, two with anencephalic or spina bifida (ASB); in the 254 controls there were four infants with abnormalities (non ASB). The differences between the two groups was significant. This may possibly be explained by the trophoblastic "rest" hypothesis. If the theory is correct, spacing of pregnancies, giving time for the uterine endothelium to return to normal, should result in fewer congenital abnormalities.—(*J.A.M.A.*, 27th October, 1978).

HYPOGLYCAEMIA IN NEWBORN INFANTS*

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INTRODUCTION :—Hypoglycæmia in the pædiatric age group is not an uncommon clinical finding. Children usually present symptoms when the true blood glucose reaches a concentration of approximately 40 mg./100 ml. Symptoms are frequently absent in new born infants, despite extremely low blood glucose levels. Cornblath and Schwartz of Philadelphia in their work on carbohydrate metabolism in the neonate had suggested that blood sugar levels less than 30 mg./100 ml. in the full term neonate and less than 20 mg./100 ml. in premature and small for date infants should be defined as *hypoglycaemia* in this age group.

Maintenance of normal glucose homeostasis.—The maintenance of a normal blood glucose level is dependent upon; (1) Adequate supply of endogenous gluconeogenic substrates (*i.e.*) amino acids, glycerol and lactate, (2) Functionally intact hepatic glycogenolytic and gluconeogenic enzyme system, (3) A normal endocrine system for integrating and modulating these two process.

Subjects and method of study.—*Subjects :*—50 children born out of normal deliveries were studied. Of these, 26 were male babies and 24 were females. 16 babies were born to primigravidæ mothers. Mothers of 8 of these babies had pre-eclamptic toxæmia and 2 babies were born to anæmic mothers. All the 50 babies selected were one day old.

Method of study.—The blood sugar level was estimated continuously for the first three days in all these 50 babies. The first day blood sugar level was estimated roughly 8—10 hours after delivery. Most of the babies were fed with nearly 10–20 ml. of diluted glucose water in divided feeds. In all the cases during the first day the mother had not started breast feeding the baby. The weight was recorded for the first 3 days, in all the babies.

TABLE I

Weight of the baby		No. of cases
1·5—2 kg.	...	1
2—2·5 kg.	...	4
2·5 – 3 kg.	...	29
3—3·5 kg.	...	16

Result.—According to the birth weight; most of the selected 50 babies, were between 2·5 to 3 kg.

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*Specially contributed to the ANTISEPTIC.

This shows that most of the babies were within the average birth weight of our country, namely 3 kg. in poor masses and 3·3 kg. in well fed communities.

When the first day blood sugar estimations was done most of the babies were fed with only sugar water.

TABLE II

The Ist day blood sugar estimation

Blood sugar level mg/100 ml.		No. of cases	
10—20 mgs	...	1	
20—30 mgs	...	9	
30—40 mgs	...	19	
40—50 mgs	...	14	20%
50—60 mgs	...	2	
60 - 70 mgs	...	3	
Above 70 mgs	...	2	

10 babies showed a blood sugar level below 30 mg%. This means that 20% of the new infants had hypoglycaemia during the 1st day of birth.

In almost all the babies, the mothers had begun to breast feed the child, within 20—24 hours after delivery on an average. The babies are also fed with sugar water.

TABLE III

The IInd day blood sugar estimation

Blood sugar level mg/100 ml.		No. of babies	
10—20 mgs	...	Nil	
20—30 mgs	...	1 case	
30—40 mgs	...	4 cases	
40—50 mgs	...	8 cases	2%
50—60 mgs	...	27 cases	
60—70 mgs	...	8 cases	
Above 70 mgs	...	2 cases	

According to the IInd day blood sugar level, only 2% of babies showed hypoglycaemic level and this denotes, that a little amount of prelacteal feed namely the high calorie colostrum could push up the blood sugar levels in these babies.

When the IIIrd day blood sugar was estimated, almost all these babies had adequate breast feeding. The blood sugar estimation showed:

TABLE IV

IIIrd day blood sugar level

Blood sugar level mg/100 ml.		No of cases	
10—20 mgs	...	Nil	
20—30 mgs	...	Nil	
30—40 mgs	...	Nil	
40—50 mgs	...	3	0%
50—60 mgs	...	14	
60 - 70 mgs	...	28	
Above 70 mgs	...	5	

TABLE V

Ist day blood sugar level in primigravida

Blood sugar level mg/100 ml.		No. of cases	
10—20 mg	...	Nil	
20—30 mg	...	8	
30—40 mg	...	4	
40—50 mg	...	2	50%
50—60 mg	...	2	
60—70 mg	...	Nil	
Above 70 mg	...	Nil	

None of the 50 babies showed hypoglycaemic levels. This was mostly due to the adequate breast feeding by the mother.

Among the 50 babies that were selected for study, 16 babies were born to primigravida mothers. When the Ist day blood sugar level was analysed in these 16 babies, 8 babies showed a blood sugar level of below 30 mg./100 ml.

This shows that nearly 50% of the babies born to primigravida mothers had hypoglycæmic levels. This may be due to the fact that the primigravida mothers start breast feeding late. These mothers ought to be taught the importance of colostrum and the significance of early breast feeding their children. If early breast feeding is instituted in this group the incidence of hypoglycæmia could be decreased.

TABLE VI

Blood sugar level mgs/100 ml.	No. of cases
10 - 20 mgs ...	Nil
20 30 mgs ...	1
30 40 mgs ...	4
40 - 50 mgs ...	2 12·5%
50 - 60 mgs ...	1
60 70 mgs ...	Nil
Above 70 mgs ...	Nil

Of the 50 babies studied 8 babies were born to mothers who had pre-eclamptic toxæmia and when the Ist day blood sugar level was analysed in these 8 babies, 1 baby had hypoglycæmic level. This showed that 12·5% of babies born to toxæmic mothers had hypoglycæmia.

Cornblath of Philadelphia in his study of "Symptomatic neonatal hypoglycæmia associated with toxæmia of pregnancy", has stated that hypoglycæmia is common in infants born to toxæmic mothers and in association with hypothermia in new born infants.

Of the 50 babies studied, 2 babies were born to mothers who were anæmic and treated with intramuscular iron. The Ist day blood sugar estimation in one of these babies were below 30 mg./100 ml.

[Birth weight 1·9 kg.—1 day blood sugar—30 mgs./100 ml.]

Again of the 50 babies the 1st day blood sugar level in 5 babies showed a level or more than 60 mg./100 ml. Of those 5 babies mothers of 4 babies had I. V. syntocinon drip for induction of labour. Most probably the I. V. glucose that was given to the mother might be the cause for a high blood glucose levels in these babies.

TABLE VII

Blood sugar level in Cæsarean section babies

Blood sugar level mg/100 ml.	No. of cases
10—20 mg ...	Nil
20 - 30 mg ...	Nil
30—40 mg ...	Nil
40 - 50 mg ...	1
50 - 60 mg ...	9
60—70 mg ...	8
70—80 mg ...	14
80 90 mg ...	10
90—100 mg ...	4
Above 100 mg ...	3

As a comparative study the Ist day blood sugar level was studied in 50 babies delivered through Cæsarean section. In these mothers section was mostly done to save the babies having fœtal distress. 1 day old Cæsarean section babies with a birth weight of 3 to 3·4 kg. were studied. The 1st day blood sugar estimation showed that none of these 50 babies had hypoglycæmic level. Most probably this may be due to the fact that, the mothers in whom Cæsarean section was done were given I.V.

glucose pre-operatively and post-operatively for a minimum of 3 days.

Discussion.—Though hypoglycæmic symptoms are frequently absent in neonates, in order to prevent permanent brain damage due to hypoglycæmia, the symptoms of hypoglycæmia in new born have to be identified. The symptoms in the order of frequency are tremors, episodes of cyanosis, apathy, convulsion, apnœic spells or respiratory distress, weak or high pitched cry, eye rolling and difficulty in feeding.

According to the study, even though breast feeding is started 20—24 hours after delivery, the hypoglycæmic level had fallen from 20% on 1st day to 2% on the IInd day. If early breast feeding is started, preferably 3—6 hours after birth, the hypoglycæmia on the 1st day could be reduced to a minimum.

Nearly 50% of babies born to primigravida mothers had hypoglycæmic levels on the 1st day. This may be due to late breast feeding in these babies. In this group, the importance of early breast feeding is to be stressed, in order to prevent permanent brain damage in these children.

In the case of mothers having pre-eclamptic toxemia, 12·5% of their babies had hypoglycæmia. This may be due to, the reason that these mothers start breast feeding their babies only very late. In this group, the health of the mother is of greater concern than that of the child. The relatives of these mothers, must take the initiative and arrange breastfeeding from the mother as early as possible.

Although only 50 cases were studied, the study shows clearly the importance of early breast feeding in our children. Even though, the prelacteal feeds namely the colostrum after a lapse of 20-24 hours after delivery could raise up the blood sugar level significantly, if early breast feeding is instituted namely 3—6 hours after delivery it would help to prevent hypoglycæmia in our children.

Acknowledgement.—We thank our Dean, Dr. (Mrs.) Parvathi Devi for kindly permitting us to utilise the hospital records. We thank Dr. May Manual, M.D., D.G O., for her kind help in preparing the article.

PRIMARY LUNG CANCER AND ASTHMA

A group of 6021 chronic asthma sufferers, 40 years old and older, were seen during the past 20 years and analyzed with regard to the development of primary lung cancer and their smoking habits. Lung cancer developed in only two patients, 0·032% as compared with 0·314 in the general population. Of chronic asthmatics only 16·9% had smoked for any significant period during the five years prior to assessment as compared with approximately 40% of the general population. Of those who did smoke, the tendency was to a lesser extent. This survey adds further evidence that cancer develops less frequently in patients suffering from an allergic disease such as asthma, perhaps bacause of some enhanced immunological activity preventing the advent of new growth or reduced smoking habits of chronic asthmatics.—(*J.A.M.A.*, 27th Oct. 1978).

AUSTRALIA ANTIGEN IN LEPROSY*

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INTRODUCTION:—Australia antigen is linked with many conditions other than viral hepatitis, (*viz*) leukemia, Down's syndrome, leprosy etc. The literature on the occurrence of Australia antigen in leprosy patients is scanty in South India. In this project the prevalence of Australia antigen and antibody in leprosy patients has been studied. The effect of presence of the antigen on the liver function tests was determined.

Material and methods.—Leprosy patients were selected from the German Leprosy mission and Stanley Medical College Hospital. The patients were classified as lepromatous, non-lepromatous, and intermediate type. Leprosy patients who had blood transfusions and who had suffered from jaundice were excluded. The controls were patients who were admitted into the Government Stanley Hospital. Care was taken to exclude patients who were having leprosy and clinical evidence of liver disease. 177 leprosy patients and 51 controls were screened. The antigen and antibody were supplied by the Christian Medical College, Vellore. Liver functions tests were done on five leprosy patients who were positive for Australia antigen, the controls being leprosy patients who were negative for antigen.

Method.—Immuno electrophoretic Method.

Results.—1. Out of 177 leprosy patients screened for antigen, 14 were positive (7·90%).

2. The total incidence of antigenemia was 4·86% (14/228 leprosy patient and controls).

3. The percentage of antigenemia among leprosy patients at Government Stanley Hospital and at German Leprosy Mission are 7·04% and 8·48% respectively.

TABLE I

Showing the percentage positive of Australia antigen at the two Centres (Leprosy and Control)

Centre	Group	Total No. of cases	Number positive for Australia antigen	% positive for Australia antigen
Stanley Medical College Hospital	Control	51	0	0
Stanley Medical College	Leprosy patient	71	5	7·04
German Leprosy Mission	Leprosy patient	106	9	8·48

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*Specially contributed to the 'ANTISEPTIC'.

4. Incidence among leprosy group :—

Lepromatous leprosy (L)	....	11·1%
Tuberculoid leprosy (N)	....	6·89%
Intermediate (N ? L)	...	4·25%

TABLE II

Showing the percentage positive of Australia antigen in various types of leprosy

Type		Total No. of cases	Number positive to Aust. Antigen	Number who were IP	Number who were OP	% positive for Australia antigen
Lepromatous leprosy (L)	...	72	8	1	7	11·1
Tuberculoid (N)	—	58	4	2	2	6·89
Intermediate	...	47	2	1	1	4·25

5. No control was positive for Australia antign.

TABLE III

Showing the incidence of Australia antigen antibody (HBAB) among leprosy patients

Group	Total number	Number positive for Australia antigen-antibody
Lepromatous leprosy L	72	2
Tuberculoid leprosy N	58	2
Intermediate (N ? L)	47	0

6. The prevalence of antigenemia among female patients (Control and leprosy patients) is nil (36/228).

7. Among the leprosy patients, four were positive for antibody (HB AB). Two belonging to the lepromatous type and two to the tuberculoid type one among the lepromatous cases was a female patient.

8. *Serum transminases, alk-phosphatase and serum bilirubin*:— There was no significant alteration in L.F.T. between Austrilia Antigen positive and negative leprosy patients.

TABLE IV

Showing the comparison between Australia antigen positive and negative leprosy patients serum transminases, alkaline phosphates and serum bilirubin

CONTROLS

		Leprosy patient negative for antigen					Leprosy patient positive for Austral.a antigen				
		SGPT unit	SGOT unit	Alk. Phos K. A.	Serum bilirubin mg/100ml	Thymol turbidity	SGPT unit	SGOT unit	Alk. Phos K. A.	Serum bilirubin mg/100 ml	Thymol turbidity
Lepromatous leprosy	(1)	36	96	13	2	5	20	38	16	2	10
	(2)	32	26	10	2	4	19	20	8	2	4
	(3)	16	26	15	2	11	16	26	10	2	10
Tuberculoid	(4)	14	18	5	2	5	58	56	8	2	3
	(5)	20	21	7	2	8	24	32	7	2	7

Discussion.—Blumberg *et al* (1967, 1970) were of the opinion that lepromatous leprosy patients were genetically susceptible to chronic infections. They confirmed this finding by their study at Central Leprosy Training and Research Institute, Chingleput (Tamil Nadu). S. S. Kelkar *et al* (1973) and Bedi *et al* (1975) stated that opportunity of infections plays a major role in the incidence of antigenemia. Shew *et al* (1972) stressed that cell mediated immunity is the determining factor. Salzon (1970) said the frequency of antigenemia in leprosy patients depends upon the frequency in the general population. Dutta *et al* (1973), Joshi *et al* (1974) and Papavangelous (1972) reported a high incidence in leprosy patients.

In this study the total incidence of 4·86% is close to the figure of Blumberg (1970) at Chingleput (Tamil Nadu). The incidence among leprosy patients is 7·90% and nil in controls. This is quite contrary to Blumberg (1967) and Salzon (1970). Out of 36 females none were positive for Australia antigen. This supports the greater susceptibility of males in contracting the infection (Blumberg (1967) and Rhodestel 1972).

Among the leprosy patients two cases of lepromatous leprosy and the two cases of tuberculoid leprosy were positive for antibody against Australia antigen. This finding is also reported by Shew *et al* (1972) and Bedi (1975). This denotes that in lepromatous leprosy there is selective depression of cell mediated immunity and humoral antibody can be produced (W.H.O. 1973).

There were no significant differences in the liver function tests of Australia antigen positive and negative leprosy patients. S. S. Kelkar (1974) reported no differences in transminase level between Australia antigen positive and negative patients. Blumberg (1970) reported a rise in transminase in Australia antigen positive patients.

Conclusion.—There was a high incidence of antigenemia in leprosy patients as compared to nil incidence in the controls. The incidence of antigenemia in lepromatous leprosy was more than in tuberculoid and intermediate types suggesting that genetic sucesptibility plays a role in the antigenemia.

Summary.—177 leprosy patients and 51 controls were screened for the prevalence of Australia antigen and antibody. On the basis of results of antigen tests (+ to –) two groups of five members each were formed. Liver function tests were done on the two groups and the results were compared.

The prevalence of antigenenemia among leprosy patients and controls was 7·9% and nil percent respectively. No significant differences were noted in the liver function tests.

Acknowledgement.—We are thankful to the Dean, Government Stanley Hospital, for permitting us to publish this paper. We are also thankful to Dr. Ganapathi German leprosy mission) for his help.

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SOME FACTORS CONNECTED WITH STERILISATION OPERATION OF THE MALE OR VASECTOMY

(1) It must be clearly understood that this method is permanent and irreversible and is only suitable for persons who have completed their families. (2) In both men and women a general medical history should be known. Treatment with anticoagulants, local anaesthetic reaction and bleeding disorders must be considered. Patients on medication (*e.g.* for epilepsy or diabetes) must be told to continue their treatment. An examination should be conducted to determine the presence of hernia, or repair, undescended testicles, hydrocele, varicocele, or other congenital abnormalities. In a woman life threatening conditions such as cardiac disorders or carcinoma, may indicate that she should, in any event, not have children, but vasectomy must be carefully considered with regard to the husband's age and likelihood of remarriage. Gynaecological disorders must be excluded and a Papanicolaou smear taken, since it would be inappropriate to do a vasectomy if the woman had to undergo hysterectomy or other surgery which would allow concomitant sterilisation. (3) Health of the children must be considered and the possibility of the loss of a child through ill health or accident must be discussed Ideally, couples of low parity should postpone sterilisation until the youngest childs first birthday. (4) The possible loss of a partner by death or divorce, should be discussed. (5) It is important to ascertain by direct questioning whether sexual response is mutually satisfactory or whether there is any coital difficulty. Sexual problems are not caused by sterilisation but if they exist before the operation, vasectomy may be blamed and subsequent regret is likely. Sexual dysfunction should be treated before sterilisation. Sterilisation prevents pregnancy, but does not solve marital problems. The couple must be told that vasectomy does not solve marital problems. The couple must be told that vasectomy does not affect sexual desire, or the act, and ejaculation will continue to occur. The difference between castration and sterilisation must be explained. (6) Both partners should consider the consequences of the loss of a child or children, loss of a spouse or marriage breakdown. (7) Vasectomy under local anæsthesia as an out-patient procedure causes very little disruption of daily routine. Post-operative discomfort and inconvenience are minimal. Local lesions did not preclude the use of local anæsthesis. (8) Rest is not mandatory. The patient is advised not to wet the wound for 7 days. There is no restriction on sexual activity provided contraception is practiced until azoospermia occurs.—(*Excerpts from S. African Medical Journal*, 6-1-1979).

CHLORAMPHENICOL AND CO-TRIMOXAZOLE IN TYPHOID FEVER*

(A Comparative Clinical Trial)

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INTRODUCTION :—Several investigators in different parts of the world, have carried out clinical trials comparing the efficacy of chloramphenicol and co-trimoxazole in typhoid fever patients in different parts of the world. Some of them have observed chloramphenicol therapy to be superior to co-trimoxazole (1) Geddes, A. M. and Murdoch, J. Mc. C., 1970. Post-graduate Medical Journal 40 Dec. Suppl. 81; (2) Scragg and Rubidge (1970), British Medical Journal, 3 : 378; (3) Samantaray, S.K. Johnson, S. C. and Charabarthy, A. K. (1975) Journal of Association of Physicians of India, 23 : 576. While a few others have upheld the opposite view, (Kamat, S. A. 1970. British Medical Journal, 3 : 320). In view of these conflicting reports we decided to carry out a comparative clinical trial with both these drugs in the treatment of typhoid fever patients.

Material and methods.—For the purpose of our study, we decided to include patients above the age of 12 years admitted to the Enteric Ward of the Government Erskine Hospital, Madurai, as this would facilitate standardisation of the dosage schedules of the study-drugs, help elicit necessary information regarding various symptoms easily and also ensure a better follow-up which in turn, would make final evaluation of the findings more meaningful.

In all, we included 100 patients in our study. They were alternately assigned either to the chloramphenicol group or co-trimoxazole group without any selection for a particular study drug group.

On the day of admission, in addition to a detailed clinical examination, each patient was submitted to the following investigations :—

(1) Routine blood and urine examination.
(2) Blood widal reaction.
(3) Blood culture for enteric group of organisms.
(4) Stool culture (if, stool specimen available).

Investigations such as leucocyte count, widal reaction and blood culture were repeated atleast once during the study period and also prior to discharge of the patients from the hospital. Stool culture for enteric group of pathogens was also carried out for all patients before they were discharged.

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*Specially contributed to the 'ANTISEPTIC'.

No specific drug-therapy was started until the results of the above bacteriological or serological investigations were available. Supportive therapy such as intravenous fluids, etc. were given to the patient whenever indicated but none of the patients was given any anti-pyretics or steroids.

Patients were examined daily, particularly for any sign of toxaemia or side effects of the study drugs and enquiries were also made regarding bowel habits. Temperature and pulse rate were recorded at 4 hourly intervals.

Once the stage of defervescence was reached, the patients were kept in the hospital for 7 days, since due to shortage of beds, it was not possible to keep them for longer periods. However, after discharging the patients, a regular follow-up and periodical blood examinations were carried out. Moreover, for patients suspected of 'relapse' or 'carriers', blood culture and stool culture were carried out.

Dosage.—Chloramphenicol was administered in a dosage of approximately 40 to 50 mg./kg. body weight daily, in 4 equal and divided doses at 6 hourly interval, till the temperature touched normal and remained so for the next 48 hours. Subsequently, the dosage was reduced to 25 mg./kg. body weight for the next 5 days.

Co-trimoxazole was administered in the recommended dosage of 2 tablets (each tablet containing 80 mg. of trimethoprim and 400 mg. of sulphamethoxazole) at 12-hourly intervals till the temperature touched normal and remained so for 48 hours, and was then continued in the same dosage for another seven days.

TABLE I

Age group		Male	Female	Total
12—20	...	43	28	71
21—30	...	13	7	20
31—40	...	6	3	9
Total	...	62	38	100

Age and sex incidence :—In our series of 100 patients, there were 62 males and 38 females. Breakup of their age group is as shown in Table I.

Temperature :—Average duration of temperature in patients of chloramphenicol group, prior to starting the drug therapy was 8·5 days, while in case of co-trimoxazole group, it was 11·5 days. Longest duration of temperature in a patient in the chloramphenicol group was 25 days and the shortest duration was 3 days. Respective figures for co-trimoxazole group of patients in this regard are 30 days and 3 days.

At the time of admission, temperature in chloramphenicol group of patients ranged from 99°F to 106°F and in co-trimoxazole group of patients, it ranged from 100°F to 106°F. Details of the temperature range in patients of both the groups are given in Table II.

TABLE II

Showing the temperature pattern at the time of admission

	Number of patients			
	Below 100°F	100°F–102°F	102°F–104°F	104°F–106°F
Chloramphenicol group ...	2	17	28	3
Co-trimoxazole group ...	—	19	22	9

Of the 100 patients included in our series, 33 had vomiting at the time of admission. Of these 33 patients, 18 were assigned to the chloramphenicol group and 15 to the co-trimoxazole group in accordance with the study design. At the time of admission, out of 100 patients, 53 had altered bowel movements of which 28 had constipation and 25 had diarrhœa. Of the 28 patients with constipation, 12 were assigned to the chloramphenicol group and 16 were assigned to the co-trimoxazole group as per the study design. Likewise, of the 25 patients with diarrhœa, 13 were assigned to chloramphenicol group and 12 were assigned to co-trimoxazole group.

Of the 100 patients in our series, 41 had organomegaly—7 of whom had hepatomegaly, 21 had splenomegaly while 13 had hepato and splenomegaly both together. Distribution of patients with organomegaly was more or less equal in both the study groups.

Of the 100 patients included in the study, widal reaction was positive, at the time of admission in 86 patients, while in the remaining 14 patients, it became positive in the course of the next 4—5 days. Blood culture was positive for enteric group of patients in 54 patients in all

TABLE III

No. of days taken for the temperature to touch normal		Number of patients	
		Chloramphenicol group	Co-trimoxazole group
1	...	1	Nil
2	...	12	5
3	...	10	11
4	...	12	8
5	...	5	7
6	...	2	5
7	...	4	3
8	...	Nil	Nil
9	...	2	3
10	...	Nil	2
11	...	Nil	2
12	...	Nil	2
13	...	1	Nil
14	...	Nil	1
15	...	Nil	1
16	...	Nil	1

Drug response :–Average time taken for the temperature to become normal with chloramphenicol therapy was 4·16 days while it was 5·74 days with co-trimoxazole therapy. Time for defervescence varied from 13 days to 1 day in chloramphenicol group of patients, while it varied from 19 days to 2 days in co-trimoxazole group of patients. Details of the time taken for temperature to touch normal in patients of both the groups are given in Table III.

Details of duration of drug-therapy in patients of both the groups are described in Table IV.

TABLE IV

No. of days	No. of patients	
	Chloram-phenicol group	Co-trimoxazole group
7	1	1
8	2	1
9	9	3
10	7	8
11	13	9
12	6	3
13	4	7
14	1	6
15	3	1
16	1	1
17	Nil	3
18	Nil	2
19	Nil	4
20	2	Nil
21 and above	1	1

Discussion.—In clinical practice, one often comes across patients in whom signs and symptoms are typical of typhoid fever, but all of them do not show a positive widal reaction. This is particularly so, if the blood sample for widal is taken early in the course of the disease. In our series too, there were a few patients in whom results of widal reaction was negative at the time of admission, but in the course of the next 4—5 days, widal reaction became positive in them. Blood culture was positive for enteric group of pathogens in 54 patients in our series.

In the absence of sophisticated laboratory facilities such as titration with Vi antigen and duodenal aspirations, we decided to assess the efficacy of the study drugs on the basis of the time taken in achieving defervescence. Chloramphenicol group of patients became afebrile an on average of 4·16 days while patients in co-trimoxazole group took 5·74 days. Average duration of therapy in chloramphenicol group of patients was 11·6 days while it was 13·08 days in case of the co-trimoxazole group of patients.

The number of days required with co-trimoxazole group for effective normalisation of temperature was highly variable. In 11 cases it took between 9 to 19 days for the temperature to return normal so that the duration of therapy was correspondingly prolonged With chloramphenicol the temperature touched normal comparatively earlier than that with co-trimoxazole. Only 2 cases in the chloramphenicol group showed a protracted course compared with 11 cases with co-trimoxazole group. Even these two cases were due to non-co-operation on the part of the patients resulting in improper medication.

Patients in the chloramphenicol group consumed an average of 73 kapseals and in the co-trimoxazole group the average consumption per patient was 61 tablets. So in comparison, the cost of therapy is much less for chloramphenicol.

Control of associated symptoms such as headache, vomiting, bowel disturbance, etc., was achieved earlier in the chloramphenicol group of patients. Early alleviation of these symptoms in patients treated with chloramphenicol seems to run hand in hand with early temperature control observed in this group of patients.

We did not encounter any complications in our patients nor did we come across side effects of a significant nature with either of the drugs. Since we were closely watching our patients for any abberration of hemopœtic system, our observations in this regard carry more than the usual significance because some authors—particularly in the Western countries have issued warnings of the possibility of blood dyscrasias with both the drugs.

Conclusion.—Based on our observations, we may state that in the treatment of typhoid fever patients, chloramphenicol therapy brings about early control of temperature and alleviation of associated symptoms, compared to co-trimoxazole therapy. This has an important bearing in hospital practice because patients treated with chloramphenicol can be discharged earlier, which would be considered extremely advantageous as there is a constant, since shortage of beds in our hospitals. From the standpoint of drug cost too, treatment with chloramphenicol is economical compared to co.trimoxazole. In a developing country like ours, this is an important aspect as this would help cut down the drug bills in hospitals as well as in private practice.

Acknowledgements.—We thank the Dean, Government Erskine Hospital Madurai for his kind permission to conduct this trial and publish the report.

We thank Dr. R. J. Modi, Medical Service Manager, Parke Davis (India) Limited, Saki Naka, Bombay, for making a generous supply of Chloromycetin kapseals for this study.

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SPONTANEOUS MILK EJECTION DURING LACTATION AND ITS POSSIBLE RELEVANCE TO SUCCESS OF BREAST-FEEDING

In a woman suckling twins it became apparent that both suckling induced and precisely timed spontaneous bursts of milk ejection were occurring. Observations on days 14, 28, 56, & 112 of lactation disclosed highly significant increases in intervals between episodes of spontaneous milk ejection. Further more, at all stages of lactation the interval between a feed and the next episode, of spontaneous ejection was significantly longer than the interval between spontaneous ejections.

The decrease in frequency of episodes of spontaneous milk ejection during lactation may be related to the decreasing release of prolactin in response to suckling. Spontaneous milk ejection episodes are felt only when the breast is full and may signal its readiness for a further suckling episode. Such bursts of milk ejection may stimulate the suckling response in babies suggesting that rigid three or four-hour feeding regimens may be unphysiological and pose a threat to the success of breast feeding in the early postnatal period.—(*B.M.J.*, 12th Aug. 1978).

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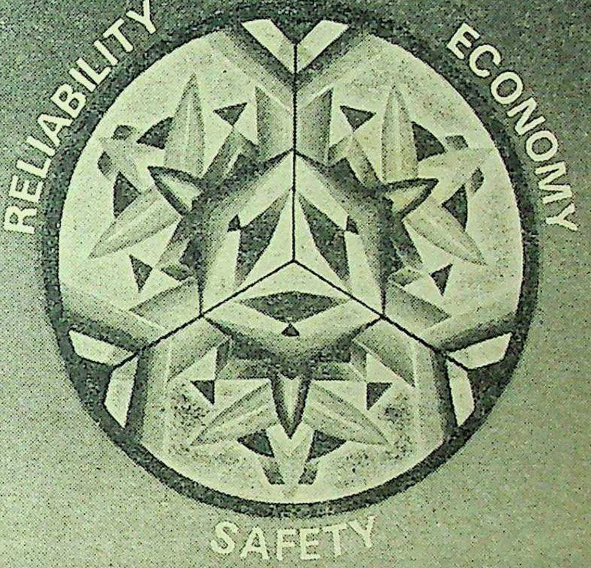

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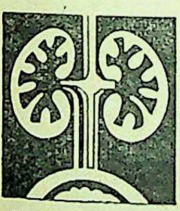
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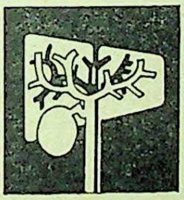
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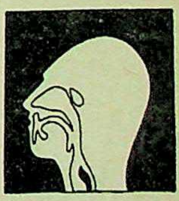
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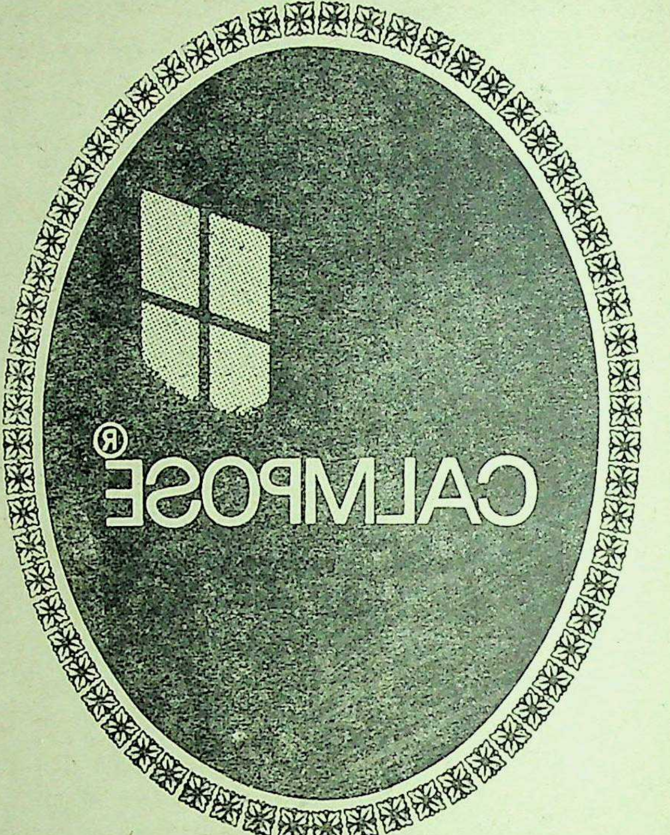

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MELIA AZADIRACHTA IN SOME COMMON SKIN DISORDERS*

(A CLINICAL EVALUATION)

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INTRODUCTION:—*Melia azadirachta* is known in vernacular as "Nimb" or Neem. The bark, leaves and seeds of this plant have been used in folklore medicine for various kinds of health disorders since time immemorial and are mentioned in Ayurvedic literature (Carak Samhita 1000 B. C). Major D. B. Spencer in his "Record of Indian Fevers, 1899" writes "I have used the leaves, bark and oil of Neem. All parts of the plant are medicinal". The bark is considered to be bitter, astringent and tonic and its tincture has been given in chronic skin diseases such as itch, boils and eczema. The leaves are anthelmintic, insecticidal, good in ophthalmia, biliousness and skin diseases. A decoction of leaves is useful in washing wounds and ulcers as an antiseptic and the paste of leaves has been applied to pustular eruptions of small pox and cow pox. The oil is useful internally in chronic malarial fevers, syphilis and other diseases while externally it is extremely useful as parasiticide in various cutaneous affections (Dymock *et al* 1891; Kirtikar and Basu, 1944). Thus all the parts of this plant seem to possess therapeutic effectiveness against certain skin diseases. However, no proper clinical evaluation of this potentiality of the plant has been carried out. Therefore, the present study was undertaken to evaluate the clinical efficacy of neem in certain common skin disorders *viz.*, eczema, ring worm and scabies.

Material and methods.—The dried leaves of *Melia azadirachta* were extracted with 70% alcohol, evaporated and the residue was dissolved in propylene glycol in a ratio of 4:6. The solution (lotion) thus obtained was used for local application. The present work was carried out in 19 randomly selected cases of acute and chronic skin disorders. All the patients were males between the ages of 25—35 years and were categorized into three groups on the basis of clinical diagnosis as follows :—

(1) Eczema (6 cases)—(*a*) Acute weeping eczema (3 cases) with inflammation, itching and purulent discharge (*b*) Acute chronic eczema (3 cases) with watery discharge and thickened skin. (2) Ring worm infection—(7 cases). (3) Scabies—(6 cases).

RESULTS :—1. *Eczema* :—These cases were not given any other type of treatment for 3 days before the start of therapy with the lotion. In three cases where there was marked oozing of purulent exudate, swelling and inflammation, two applications of this lotion on the first day markedly brought down the oozing and inflammation. The subjects had marked relief. Further applications for 5—10 days cleared the condition and resulted in new skin formation. All the three cases responded well and there was no recurrence till 3 months (observation period).

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*Specially contributed to the 'ANTISEPTIC'.

The other three cases where the oozing was not marked and the skin was thickened with scaling at same places, application of the lotion resulted in considerable improvement, but the response was slow. After 15—20 days' application two cases improved markedly while the third one had a relapse (Table I).

TABLE I

Showing the effect of the extract from leaves of melia azadirachta (Neem) in common skin disorders

Skin disorder	Signs and symptoms	Previous treatment taken	No. of applications (2 applications/day)	Remarks
I. *Eczema* (6)				
A. Acute (3)	Marked oozing, inflamation, itching, purulent discharge	Nil	10—20	Marked improvement in 1 day. New skin formation in 5—10 days
B. Acute on chronic (3)	Watery discharge, thickened skin	Corticosteroid ointments	30—40	Response was slow One case had relapse
II. *Ring worm infection* (7)	3 cases—extensive lesion involving lower abdomen, perineum and medial sides of thighs (3—4 yr. duration)	Nixoderm, salicylic and benzoic acid ointment (Whitfield ointment)	4—8	Complete cure
	4 cases—Milder type involving groins only (6 mth—1 yr. duration)	—	4	Complete cure
III. *Scabies* (6)	Chronic cases, lesion scattered all over body with infection in webs of fingers of hands	Benzyl benzoate Sulphur preparations, Sulpha drugs	6	Complete cure

2. *Ring worm infection*:—Two cases had extensive ring worm infection of the perineal region and groin extending upto the lower abdomen. They had this disorder since the last 3—4 years. Exacerbations occurred during rainy season but some trouble remained in winter also. When they presented for treatment the disease was extensive with reddening of skin and clear cut circular margins of the infection. They had used various kinds of ointments from the market, like Nixoderm and other ointments containing salicylic and benzoic acids (Whitfield ointment) with no relief. All these drugs were stopped and after three days neem lotion was applied twice daily. Only two days application

made a dramatic change in one case, and he never applied it on the 3rd day. The other patient applied it for 4 days. Both were cleared of the disorder and since then had never developed it again (observed for a period of one year).

The other 5 cases were of a milder type of 6 months to one year's duration and the disorder was confined to the groins only. After two days' application they were cleared of the disease. No recurrence was reported (Table I).

3. *Scabies*:—6 cases of scabies were treated. These were chronic cases and two had massive secondary infection in webs of the fingers of hand. They had previously used benzyl benzoate and sulphur preparations locally and sulpha drugs orally but had no significant improvement. All these cases were treated only by local applications of lotion of neem twice daily. Three days treatment (6 applications) was effective in all these cases (Table I).

4. *Controls*:—Application of propylene glycol alone in one case of each series carried out for 2 days did not have any effect whatsoever. However, in the same cases when the neem extract was applied, marked improvements occurred as already described above.

Discussion.—The therapeutic effectiveness of the plant *Melia azadirachta* in skin conditions has been described in our ancient literature and on that is based the present day use of neem tooth pastes, soaps and antiseptic creams. (Mitra, 1952; Pradhan and Jotwani, 1968). But, how far, these, preparations are beneficial clinically has never been assessed properly. The poor effectiveness of these preparations may be because of the fact that the active ingredients in the oily portion of neem may be getting precipitated (saponified) and as such do not remain in contact with the skin. Hence these may not have any antiseptic property. Moreover, the concentrations in these preparations may be subtherapeutic and minimal to result in any clinical benefit. In the present study local application of a concentrated extract of neem leaves produced a definite improvement and cure in all the cases of acute eczema, ringworm infection and scabies, Moreover, it was found effective in those cases also where previous treatment with nixoderm, salicylic and benzoic acid preparations in ringworm infection and benzyl benzoate, sulphur preparations and sulpha drugs in scabies had failed. This indicates a definite superiority of neem extract over other preparations. The treatment was required only for a short duration. In some cases, only two days application was sufficient. However, in the cases of chronic eczema where skin was thickened, the response was slow and improvement occurred after 15—20 days. Furthermore, complete cure was indicated by the fact that no recurrence was reported except in one case of chronic eczema.

Most of the skin ointments presently used in our country are very costly and are beyond the buying capacity of poor people who generally suffer from these skin disorders. It is important to note, keeping in mind all the facts mentioned above, that neem extract may provide a very useful and cheap remedy for these common skin disorders. This broad spectrum effect of the extract obtained from the leaves of Melia azadirachta (neem) is of vital importance as no other single ointment is available which is effective in all these three skin disorders (eczema, ring worm, scabies).

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TREATMENT OF HYPOPARATHYROID PATIENTS WITH CHLORTHALIDONE

In an effort to maintain normal serum calcium levels without inducing hypercalciuria, seven hypoparathyroid patients were treated for up to 25 months with chlorthalidone, a thiazide-like sulfonamide diuretic plus a salt-restricted diet without added vitamin D, Mean 24-hour calcium excretion decreased from 179 to 88 mg. ($P < \cdot 001$), and mean serum calcium level increased from 8·2 to 9·3 mg./dl ($P < \cdot 05$). Diuretic therapy or moderate salt restriction alone was not as effective as combined therapy. Beneficial effects were sustained for as a long as therapy was maintained. The rise in serum calcium level, which involves the filterable and ionised fractions, cannot be due entirely to reduced excretion and may, in part, be explained by increased intestinal absorption. Oral chlorthalidone plus a low salt diet appears to be an effective alternative to vitamin D in the maintenance therapy of some patients with hypoparathyroidism.—(*J.A.M.A.*, 22nd Sept. 1978).

TREATMENT OF DUODENAL ULCER WITH CARBENOXOLONE SODIUM

In a double masked trial, 43 patients with an endoscopically confirmed, symptomatic duodenal ulcer were allocated at random to treatment with either carbenoxolene sodium or placebo, both provided in identical "positioned release" capsules. Endoscopic review of ulcer healing after 6 weeks treatment showed, that 12 patients (60%) receiving carbenoxolone had healed ulcers, compared with 5 (25%) receiving placebo ($P. = 0{\cdot}05$). Symptomatic remission occurred by the 4th week in 17 patients (85%) receiving carbenoxolone, compared with six (30%) receiving placebo. ($P < 0{\cdot}01$). The mean serum carbenoxolone level in patients with healed ulcers was 31·11 μg/ml compared with 17·75 μg/ml in those with unhealed ulcers ($P < 0{\cdot}005$). Side effects such as oedema, weight gain, hypertension and hypokalaemia were observed, but they did not necessitate withdrawal of the drug and were readily controlled in every instance. These results confirm the therapeutic efficacy of carbenoxolone sodium in duodenal ulcer. In addition, a relationship between serum carbenoxolone levels and the occurrence of ulcer healing was observed.—(*Medical Journal of Australia*, 13-1-1979).

GAMA BENZENE HEXACHLORIDE (1%) IN THE TREATMENT OF SCABIES*

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INTRODUCTION :—Scabies is a parasitic infestation of the skin persisting as an endemic disease in our society and periodically breaking out into epidemics. It is the commonest disease seen in our skin clinic requiring effective management. Scabies is caused by the mite *Sarcoptes scabiei var hominis.* The female mite after mating, burrows into the stratum corneum and deposits the eggs. The eggs hatch out into larvæ which moult twice to become the adult mites and the cycle repeats[1]. But the total number of parasites in one patient is not more than 15—20 at a time in an ordinary cases of scabies. In cases of Norwegian or crusted scabies the parasite count may exceed one lakh.

The major discomfort of this disease is the intolerable nocturnal itching. The condition is contageous to close contacts and hence easily spreads to other members of the family. Clinically, scabies is characterised by the burrows which are very difficult to make out in an advanced case of scabies. Patients usually present with pruritic papules and pustules commonly in the web spaces of fingers, wrists, elbows, axillæ, nipples, umbilicus, genitals and buttocks. Genital lesions are more common in men and the waist is usually affected in females. Scabies is usually associated with impetigo and furunculosis due to superadded bacterial infection as a result of the trauma caused by scratching.

The treatment of scabies is highly effective and very simple. It is productive of a definite cure in almost every instance, provided the details of the treatment are scrupulously adhered to and the patient is not exposed to reinfestation.

Prior to 1940, sulphur ointment was the chief remedy used and undeniably effective against the parasite in a strength of 10% in petrolatum or emulsion base.[2] The ointment was applied on three consecutive days from neck to feet with a bath before and 72 hours after commencing the treatment. Later on, benzyl benzoate (20 to 25%), gama benzene hexachloride (1%), crotomiton and thiabendazole were added to the list in the treatment of scabies. Thiabendazole was tried both topically and orally. Of these, gama benzene hexachloride was found to be very effective like sulphur.

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*Specially contributed to the 'ANTISEPTIC'.

A trial with gama benzene hexachloride (1%) in the treatment of scabies was conducted in the Skin clinic, Government General Hospital, Madras and its efficacy was analysed and is being reported here.

Material and methods.—Twenty-five cases of scabies were collected at random from the out-patient section of the Skin clinic, Government General Hospital, Madras. Twelve of them were admitted as in-patients for treatment and the rest were treated as out-patients. Scales and crusts collected from the lesions of all the in-patients were examined in 40% KOH for the itch mite. The following types of patients were selected for the study:—

(*i*)	Extensive scabetic lesions with minimal impetigo	...	6
(*ii*)	Extensive scabetic lesions with severe impetigo	...	15
(*iii*)	Crusted scabies	...	4
	Total cases	...	25

Skin scrapings for the parasite Sarcoptes scabiei var hominis were positive in 5 cases. Of the 25 cases, nineteen were males and six were females and their age varied from 8 to 72 years. The main complaint was itching and the total duration of the complaint varied from 10 days to three months.

The in-patients were given a preliminary bath with ordinary toilet soap and water. One per cent gama benzene hexachloride in aqueous base was applied all over the body from neck to feet and the patient was permitted to wear fresh clothes. The next bath was advised after 24 hours with change of clothes. The out patients were also advised to do the same and their family contacts were also treated with either gama benzene hexachloride or sulphur ointment. Those who were not cured of the disease with one application were given a similar second application after an interval of 5 days. Patients with impetigo were also given oral sulphadiazine 2–4 gm./day in divided dose for a week.

Analysis:—There was marked reduction in itching in all patients within 24 hours after the application. Seventeen of the 25 were cured completely. Eight patients with extensive scabetic lesions and severe impetigo were only partially improved after the first application. These patients were given another application of the lotion. The lesions resolved in a few days. One patient had pediculosis corporis with demonstrable pediculi in addition to scabies. Single application of gama benzene hexachloride was effective against both the parasites. No untoward effect due to the drug was noticed in this trial.

Conclusion.— One per cent gama benzene hexachloride in aqueous base was used in the treatment of scabies. A single application was effective in 17 cases. A second application was needed in 8 The bacterial infection was treated simultaneously with oral sulphadiazine. No untoward effect due to the drug was noticed. In general gama benzene hexachloride was found to be effective against sarcoptes scabiei var hominis.

Acknowledgement.—We thank Messrs. Aristo Pharmaceuticals (P.) Ltd., for supplying scabita (1% gama benzene hexachloride in aqueous base) for this study.

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LEUKOPENIA IN ANOREXIA NERVOSA

To determine whether patients with anorexia nervosa (AN) and leukopenia have an increased risk of infection, the authors reviewed the incidence of leukopenia and infection in 68 cases of AN and studied the mechanisms of profound neutropenia in one. Compared with controls, patients with AN had substantially lower total leukocyte counts and absolute, neutrophils, lymphocyte, and monocyte counts. Despite frequent and often severe panleukopenia, the patients with AN had no more infections than did the control subject. The patients with severe neutropenia had a hypocellular bone marrow biopsy specimen showing relative myeloid hyperplasia, normal distribution of neutrophils between the marginal and circulating pools and normal bone marrow neutrophil reserves as estimated by response to hydrocortisone sodium succinate, patients with AN and associated leukopenia do not have increased infection propensity.—(*J.A.M.A.*, 27, Oct. 1978).

PRESCRIPTION PATTERNS IN OUT PATIENTS

In a study of the prescription pattern of physicians among 100 outpatients over a one-year period, results indicated that use of psychotropic drugs was 90% among patients attending more than one clinic, and 80% among those who attended only the medical clinic. It was also noted that minor tranquilisers were prescribed more frequently yet often with least justification. Both neuroleptics and antidepressants were used sparingly. Nonrecognition of depression because of concentration on the associated physical complaints may explain the infrequent use of antidepressants. On the other hand, lack of specific action of these drugs and the need to solve all one's problems with pills may be responsible for the frequent use of anxiolytics. In addition, minor tranquilisers were often prescribed without a goal and, therefore, continued for many years. Overuse of psychotherapeutic drugs, prescription of subclinical doses of antidepressants, and use of minor tranquilisers without a therapeutic goal are important findings which need to be corrected through continuing medical education. The survey has indicated that there is an urgent need for continuing medical education of physicians in the use of psychotropic drugs.—(*New York State Journal of Medicine*, Nov. 1978).

PROGRESS IN MYELOMA*

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INTRODUCTION :—Multiple Myeloma is a neoplasm of the plasma cells, the clinical manifestations of which are dictated by the characteristic bony lesions produced by the tumour, the effect of bone marrow replacement by tumour tissue and the pathological manifestations occasioned by the over production of myeloma proteins and their constituent polypeptide chains.

The term multiple "myeloma" was coined in 1873 as a result of the pathological studies of Rustizky as a disease characterised by softening and fracture of bones and the presence of a peculiar protein in the urine which had been described in 1845 by Mc Intyre, Dalrymple, Watson and Bence Jones. Introduction of serum electrophoresis (Tiselius–1939) led to the description of the serum protein spike by Langwells (1939), ultracentrifugation studies (1934) and immuno electrophoresis (1953). Graber and William have helped to characterise the abnormal serum proteins[1] further.

Multiple myeloma is the most common disorder produced by a seemingly uncontrolled proliferation of plasma cells—these cells produce a structurally homogenous gamma globulin (M component in electrophoresis) and or its constituent sub units. Immuno electrophoresis reveals five types of immunoglobulins IgG (over 75%) IgA (20%) IgM (5%) IgD & IgE (both found only in very small proportions). Each immunoglobulin is made up of 2 of the heavy chains (named gama, alpha, mew, Delta or eta) and two eight chains named (Lamda or Kappa). Ultracentrifugation studies serve to differentiate the immunoglobulins based on their molecular weight., IgG being the lightest (mol. wt. 160,000) and IgM being the heaviest (mol. wt. 1000,000). Our studies reveal that 75% of myeloma patients encountered in Trivandrum had IgG whereas 25% had IgA as the main abnormal protein[2]. Western literature gives the frequency as IgG 70%, IgA 25% IgM, IgD & IgE 3—5%. The immunoglobulin abnormality of myeloma may occur in three patterns, (1) complete gamma globulin molecules (IgG, IgA, IgM, IgD, IgE) containing kappa or lamda light chains, (2) Free light chains only or in addition to complete immunoglobulins and (3) fragments of heavy chains only without the concomitant production of free light chains.

Free light chains may appear in the urine and can be detected by immunoelectrophoresis. Those that have the thermal properties of Bence Jones proteins can be demonstrated by controlled heating of urine. They precipitate at 50—60°C and redissolve at 90—100°C. Best results are obtained if the urine pH is maintained at between 4·5 and 5. Some light chains do not give the characteristic thermal pattern even under optimal conditions. Normally the production of heavy chains and light chains is approximately equal. The factors responsible for the excessive production of proteins, imbalanced production of constituent chains and the synthesis of altered proteins are not clearly understood. The M components are responsible for specific clinical effects due to their physio-chemical properties such as cold precipitation, high intrinsic viscosity, complexing with other serum proteins such as clotting factors, and amyloidogenesis. In addition M components lead to excessive catabolism of immunoglobulins thereby leading to functionally low levels of the latter. Myeloma patients are more susceptible to infections, which pose a great hazard. In 99% of cases of multiple myeloma M components are demonstrable. In IgG, IgA & Bence Jones proteins kappa and lamda chains are equally distributed where as IgD & IgE are associated with lamda chains.

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*Specially contributed to the 'ANTISEPTIC'.

IgG proteins may be subclassified into IgG1 (frequency 72%) IgG2 (14%) IgG3 (10%) & IgG4 (4%). IgG3 raises viscosity more than Ig G1. Less is known about Ig G2[3]. With successful treatment the abnormal M proteins come down. The degree of fall of the protein abnormality correlates with the reduction of the tumour mass. The rate of fall varies. It has been observed that cases in which the abnormal serum proteins fall precipitously with the onset of chemotherapy, have got a shorter median survival than those in whom the fall in the abnormal protein is slower. Since Bence Jones proteins have a shorter half life (less than 1 day) than orther M proteins (14—21 days) they disappear earlier with treatment. A corresponding rise in immunoglobulins occurs (15–30%) in successful cases whereas this does not occur in the non-responders. Changes in the amount of light chain types are not found to correlate with the prognosis.

Extra medullary plasmocytomas.—Though the plasma cells are widely distributed outside the bone marrow most of the plasma cell tumours affect the marrow and only rarely they arise in other sites. The respiratory tract is frequently affected but any other tissue may be involved. On long term follow up they may disseminate to other tissues. Their mode of spread resembles that of reticulum cell sarcoma *i.e.*, they spread through the lymph nodes to the blood stream, bones, subcutaneous tissues and other organs. Even when wide spread, bone marrow is relatively spared. On the other hand solitary myeloma of bone behaves like an early form of myelomatosis spreading to the bone marrow and only rarely involving other structures.

Though it is rare to get paraprotein abnormalities in solitary myelomas high values of abnormal proteins have been described[4].

Non-secretory myelomas—A group of myelomas where immuno globulins are not detectable in the serum (1%) is called non secretory myelomas. The mechanisms vary and hence this group is heterogenous[5].

Clinical co-relation of immuno globulins.—*IgG myelomas*:—(*a*) Greater reduction of normal immunoglobulins. (*b*) Infections common. (*c*) Higher levels of M. proteins. (*d*) Slower tumour growth. (*e*) Less hypercalcemia and amyloidosis.

IgA myelomas:—(*a*) Hypercalcemia prominent. (*b*) Less infections. (*c*) Amyloidosis not uncommon.

IgD myelomas:—(*a*) Usually in younger patients. (*b*) Bence Jones proteinuria is frequent. (*c*) Hypercalcemia, renal failure and amyloidosis are more common.

IgE myelomas:—Anæmia, thrombocytopenia and hyperviscosity common. Plasma cell leukæmia may occur—Bony lesions may be absent.

Bence Jones myeloma:—(*a*) Light chains only, (*b*) Fastest growth, (*c*) More osteolytic lesions, (*d*) Hyper calcemia, amyloidosis and renal failure most common, (*e*) Survival is poor.

Myeloma without detectable M components:—(*a*) Worst prognosis being for the most poorly differentiated group, (*b*) Severe reduction of normal immunoglubulins in the rule.

Diagnosis of myeloma:—The disease should be suspected under the following circumstances:—(1) Bone pains generalised or localised, (2) Unexpected fractures, (3) Progressive anæmia not due to other obvious causes, (4) Frequent infections, (5) Bence Jones protenuria, (6) Hypercalcemia, (7) Abnormal elevation of serum proteins components detected on routine investigations. A raised erythrocyte sedementation rate strongly supports the diagnosis.

Criteria for diagnosis.— *A. Clinical and laboratory*:—(1) X-ray evidence of osteolytic lesions or generalised osteoporosis-especially in the vertebræ, (2) Myeloma proteins 'M' band on serum electrophorosis, (3) Myeloma proteins 'M' band on electrophorosis of urine.

B. Cytological criteria:—(1) Plasma cells and or myeloma cells forming more than 10% of the total number of cells in the bone marrow (at least 1000 cells should be scrutinised), (2) Myeloma cells in at least 2 specimens of peripheral blood smears. Examination of the "buffy coat" may be give more positive values, (3) Biopsy proof of plasmacytoma either in bone or soft tissues.

Prognostic factors:—Initial blood urea levels above 80 mg.% indicate poor prognosis and the median survival in consistently shortened with increasing levels of blood urea ; 50% of cases with blood urea over 80% died within 2 months If the Bence Jones. proteinuria is corrected before renal damage occurs, prognosis is better ; low serum level albumin levels indicate bad prognosis. Well circumscribed osteolytic lesions respond less to therapy than generalised osteoporotic lesions.

Rate of fall of M proteins:—Rapid fall with onset of treatment indicates poor outcome.

Tumour load:—Higher tumour volume worsens the prognosis.

Type of M protein:—IgG myeloma has a better prognosis than IgA and Bence Jones proteins positive myeloma.

Non-secretory myelomas have the best prognosis.[10]

TREATMENT:—*Objectives*:—(1) Significant reduction (more than 50%) in M proteins including Bence Jones proteins. (2) Reduction in plasma cell mass. (3) Reduction in the size of the soft tissue masses and (4) Repair of osteolytic lesions, X-ray demonstrable recalcification of bone. In some cases the X-ray appearances do not improve even for 6—12 months. They may even worsen and these should not be interpreted as failure of therapy. (5) Correction of anaemia and blood urea levels.

Specific treatment of myeloma with drug or irradiation has been employed for over forty years. At present it is thought that a judicious employment of chemotherapy, radiotherapy and general measures serve to reduce the tumour mass, alleviate suffering and significantly prolong life.[1] Though the disease was believed to be invariably fatal several longterm survivals extending over a few decades have been reported.

Specific therapy :—Irradiation is mainly employed for localised myelomas. When local lesions such as those occurring in the spine or other bones are irradiated, rapid resolution of the tumour occurs and symptomatic releif from pain and disability is remarkable. Local irradiation should be considered in addition to systemic chemotherapy when there are pathological fractures which are troublesome and impending compression of the spinal cord. The usual dose range is 500—1500 rads.

Of late[6] total body irradiation using a dose 110—300 rads has been tried with a view to eliminate the tumour. Partial success has been obtained with the availability of bone marrow transplantation and progress in this direction can be expected.

Chemotherapy remains the sheet anchor of treatment in myelomatosis.

Drugs employed :—Urethane was employed in the earlier parts of this century but has now been discarded due to the availability of better drug combinations.

Cyclophosphamide, dose 2—3 mg./kg. body weight orally may be administered either as a continuous regimen or intermitently in higher doses.

Melphalan :—Dose 0·15—0·25 mg./kg. body weight may be administered either as a continuous regimen or intermittently in higher doses.

Both cyclophosphamide and melphalan have been shown to produce statistically similar effects[1]. Addition of prednisolone serves to increase the tumouricidal effects and to reduce toxicity. Continuous low dose therapy has been compared with high dose intermittent therapy. Though in a large series the behaviour of the two groups is grossly similar it is the general impression that intermittent therapy is slightly better. Successful results are obtained in over two thirds of cases[1].

Cyclophosphamide and melphalan have been combined in cyclical regimens and this combination is reported to be better than either drug being administered separately[8, 9, 10].

Conventional drug combinations using cyclophosphamide or melphalan continuous therapy :—

Melphalan 8—10 mg./day/oral for 7—10 days after which the dose is reduced to 2 mg./day and continued depending on the response and bone marrow toxicity. Prednisolone in a dose of 0·5—1 mg./kg. body weight is also given.

Melphalan 0·25 mg./kg. body weight per day/oral for 4 days. This course is repeated once in 2—6 weeks depending on the response. Along with melphalan prednisolone 2 mg./kg. body weight is added.

Cyclophosphamide :—Continuous therapy 2mg./kg. body weight oral/day depending on the response.

Intermittent :—Larger doses of cyclophosphamide 15—20 mg./kg. body weight or 1 mg./m² can be given intravenously once in 2—5 weeks depending on the tolerance of patient.

If oral dose is preferred 0·25 mg./m² can be given orally on 4 consecutive days, the course repeated once every three weeks.

In all these regimens prednisolone is administered in the doses indicated earlier. Monthly cycles of melphalan—prednisolone—cyclophosphamide—prednisolone each administered sequentially for one week each have been reported to be more beneficial than regimens involving either melphalan or cyclophosphamide[10].

Other new drugs in the treatment of myelomatosis :—

1. 1—3 bischloro-ethyl 1—nitroso urea (BCNU) in combination with melphalan cyclophosphamide and prednisolone was shown to improve the success rate and probably the disease free survival rate over a 5 year follow up[8, 9].

1st day :—BCNU 75 mg./m² intravenously.

Days 1—7—Melphalan 2mg./day orally, cyclophosphamide 50mg./day orally and prednisolone 40mg /day orally.

The course is repeated every 8 weeks. Maintenance treatment during remission was shown to be specifically helpful in prolonging survival, when compared to intermittent regimen administered on relapse.

2. *Vincristine* :—This drug which has been employed in various malignancies has been found to be of great use in reducing tumour mass, bringing about rapid relief and probably also prolonging survival. The dose employed is 1·5–2 mg./m2 body surface intravenously. The drug may be used in weekly doses initially till all the evidence of the disease has disappeared and the M proteins have returned to normal. Follow up with monthly doses of vincristine has also been advocated. In our hands this drug has proved to be of great use in reducing the tumour load rapidly.

Recently more aggressive combinations have been advocated. One regimen which we have found to be quite effective and tolerated by our patients is given below :—

Ist day :—Vincristine 1·5 mg./m2 intravenously.

Days 2–5 :—Cyclophosphamide 3 mg./kg. body wt./day orally, melphalan 0·15 mg./kg. body wt./day orally. and prednisolone 1·5 mg./kg. body wt./day orally.

Duration of one course is 5 days. The WBC count is done on the 14th and 21st days and a second course is given when WBC count is above 2,000/cumm. Melphalan and cyclophosphamide doses are increased by 20% in the subsequent courses. The drugs should be continued till the clinical, biochemical and radiological parametres of the disease are abolished. The ideal drug combination has not yet been determined. Work is proceeding at several centres in this direction. Results so far achieved show that drug combinations employing several drugs may be superior to regimens using the conventional drugs alone.

General therapy.—Specific treatment of the myelomatous patient gives rise to various problems.

Infections :—They are common during the phase of intensive chemotherapy. Isolation, reversed barrier nursing and early employment of bactericidal antibiotics serve to overcome the infections. Administration of gamma globulins have been tried but the results are disappointing. Granulocyte transfusions are life saving in the presence of granulocytopenia.

Hyperurecemia :—This is to be expected during the phase of intensive chemotherapy and also in those with high tumour load and renal impairment. This may lead to secondary gout and uric acid nephropathy resulting in acute renal failure. Hyperuricemia is prevented by administration of Allopurinol 100 mg. 6th hourly.

Renal impairment in myeloma:—Longstanding myeloma especially with Bence Jones protenuria is prone to renal impairment. Kidney lesions are due to precipitation of the proteins in the kidney, amyloidosis and uric acid nephropathy. The picture may take the form of persistent renal failure or acute renal failure may be precipitated by starting treatment, with infections, contrast nephrography and dehydration. Intravascular coagulation,[11] hyperviscosity states and hypercalcemia all tend to worsen the renal function.

Renal function is preserved during treatment by ensuring sufficient fluids to produce atleast 2·5 litres of fluid and administration of frusemide to produce mild diuresis.

Acute renal failure can be managed by dialysis procedures. Renal lesion can be prevented if myeloma is detected early and the tumour mass is reduced by chemotherapy.

Hypercalcemia.—During the active phase of the disease and initiation of therapy serum calcium levels may go very high and lead to encephalopathy and metastatic calcification. This can be treated by, (1) fully hydrating the patient, (2) intravenous infusion of phosphate and sodium chloride and (3) administration of large doses of corticosteroids. Recently calcitonin has been employed in doses of 140—280 MRC units hourly and this has produced beneficial results.[12] Mithramycin has been used for treating the osteolytic lesions, hypercalcemia and hypercalciurea. Even though this drug relieved bone pains, hypercalcemia and hypercalciurea, the primary disease was not significantly altered.[13] Addition of sodium fluoride and calcium carbonate to standard chemotherapy with melphalan and prednisolone led to a significant increase in bone formation compared to placebo.[14] Some authors feel that this newly formed bone is brittle and hence not quite advantageous.[1]

Hyperviscocity syndromes:—Presence of excess of M proteins expecially of IgM increases the viscosity of the blood. Increase in viscosity varies with the type of the protein and its concentration. IgM raises viscosity to a greater extent than the others. This leads to defective blood flow in the microvasculatures and increases the resistance to cardiac functions. As a result symptoms attributable to dysfunction of the brain, heart, eyes and kidneys occur. Immediate treatment is to reduce the viscosity by plasmapheresis using a cell separator. Thiols have been employed since they inhibit the synthesis and accelerated the catabolism of these proteins.[5]

Bleeding.—This may occur due to thrombocytopenia (due to marrow involvement or during therapy), platelet dysfunction, excessive catabolism of coagulation factors or development of circulating anticoagulants. Treatment depends on the cause.

Bony fractures :—These have to be immobilised till chemotherapy takes effect and the bones become remineralised. Spine may have to be protected by spinal jacket or by a plaster cast. If there is evidence of cord compression, irradiation to the spine with or without laminectomy may be required.

Other measures :—Being a prolonged illness with a series of major complications the morale of the patient is likely to fail and constant support from the attending physician is essential. Early ambulation is indicated to prevent osteoporosis. Drugs are potentially toxic and so constant monitoring for toxicity is needed to avoid fatal overdosage.

The duration of treatment has not been clearly established. The value of maintenance therapy has been disputed. In many cases of myeloma, myelomonocytic leukæmia has supervened when followed up for a few years. This has been partly atributed to treatment with cytotoxic drugs though this is not always the case. The reason for this change is not known[5] . The leukæmic blast cells have been shown to contain immunoglobulins. Sometimes myeloma and acute leukæmia may start simultaneously.

Conclusion.—Many advances have taken place in the diagnosis and treatment of myeloma. Work is being done in several centres in the world with a view to determine the ideal drug combination and to bring about a cure.

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NON-PULMONARY TUBERCULOSIS

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PART II.

(Continued from page 628 of the October, 1979 issue of the "ANTISEPTIC")

CARDIOVASCULAR TUBERCULOSIS

Tuberculosis of the pericardium.—The incidence of T. B. pericardium depends upon the source of information; *i.e.,* autopsy series, surgical series or clinical series, the last being the least reliable. The involvement of the pericardium can occur as a consequence of the dissemination of the organism in miliary tuberculosis. More often, the pericardium is involved in tuberculous disease as a result of spread by contiguity from mediastinal lymph nodes. In many studies, when pericardiectomy was done and mediastinum was explored, caseous disease in the mediastinal lymph node was discovered. So, pericarditis in tuberculosis is often due to spread by contiguity and less often due to blood borne dissemination.

When one encounters a subject with obscure cardiac enlargement without murmurs over the precordium, without systemic hypertension and even without ECG abnormalities, pericardial effusion has to be considered. Tamponade with raised venous pressure and enlarged liver need not occur at this stage.

Tuberculous pericarditis may occur as—"dry" or fibrinous, with effusion and eventually as constrictive pericarditis.

The eventual course of pericardial effusion without therapy if the patient escapes tamponant failure, is constriction.

Sukumaran (1967)[37] from Vellore in his study has shown equal sex incidence in tuberculous pericarditis. The onset is acute in about 30–40% of cases. In Spodick's studies it was greater in women and 45% of subjects with tuberculous pericarditis got through a stage of pericardial effusion with or without tamponade. When these subjects were treated with specific therapy, there is always a chance of development of constriction in 45% of the cases. Hence there is a great need for detection of pericarditis due to tuberculosis and treatment with anti-tuberculous therapy with addition of steroids early. Sen *et al* (1962)[38] in a group of subjects of constrictive pericarditis have found evidence of tuberculosis in 64 to 75%, thus indicating that at least in Indian subjects, the most likely cause of constrictive pericarditis is tuberculosis. This point is emphasized, because at surgery, it is very difficult to demonstrate tubercles in resected specimens because they might have had anti-tuberculous therapy and tissue response in the pericardium may also not be specific. In fact, Victor Solomon (1978)[39] in his series of forty cases of clinically suspected tuberculous pericardial disease (resected specimen) found histological proof of tuberculosis in only one specimen. Though constitutional symptoms like fever, and weight loss are seldom pronounced, only the collection of fluid in the pericardial sac decides the clinical picture. At one extreme is the slow quiet collection of fluid in the pericardial sac not producing a clinical phenomenon of tamponade and the patient presents himself with vague chest discomfort and effort dyspnœa. Clinical examination at this stage will reveal increase in cardiac dullness, with no other evidence of pericardial effusion. On the other hand, rapidly collecting fluid in the pericardium will produce tamponade and ascitis. Why ascitis precox occurs only in constrictive, pericarditis and not in congestive cardiac failure is a difficult question to answer It may be that constrictive pericarditis interferes with lymphatic drainage across the diaphragm and therefore impedes the return of fluid from the addomen, which normally also occurs through the transdiaphragmatic lymphatics. The other explanation is that the degree of elevation of rt. atrial pressure is much more in constrictive pericarditis, than in simple CCF. There is also a suggestion that there is a separate streamlining of hepatic venous blood into the right chamber along with the IVC. Lastly Snapper gives an unconvincing reason, that it is because the hepatic vein joins the interior vena cava inside the pericardial sac thus being vulnerable to constriction.

Ascitis precox occurring with pericardial effusion or constrictive pericarditis may be due to tuberculous peritonitis. Hence, every patient with constrictive pericarditis who develops ascitis first, must be examined carefully, by aspirating the fluid to exclude tuberculous peritonitis. It is also not uncommon to find pleural effusion or healed inactive lesions of tuberculosis in subjects with pericarditis.

Whenever, there is associated serous membrane involvement in the abdomen in subjects with pericarditis and also the pleura is involved, it is necessary to differentiate it from collagen disease.

The course of pericarditis is variable. A few develop adhesive pericarditis rapidly and constriction within a few weeks. The other extreme is the example of a man who lived for 20 years with repeated aspiration in the prechemotherapy era, showing that some patients with pericardial effusion escape constriction. However, a very high proportion do develop constriction.

Calcification in the pericardium is not a definite indication of constriction. It is only a tell tale evidence of the inflammatory disease of the pericardial sac. In India Bhayana, *et al* (1971)[40] has shown, that calcification of pericardium is present in 15% in constrast to Western series. The ethnic response to tuberculosis seems to be peculiar to the organ involved, the type of response is so variable, the difference between the immunity and hypersensitivity being the decisive factor. Racial resistance may also make a difference in the course of the disease.

The use of steroids in tuberculous pericarditis is still debatable. Controlled studies are necessary to delineate the value of steroids in pericarditis in minimising development of constriction. Though with susceptible bacilli and adequate anti-T.B. therapy, one may feel it safe to use steroids, in these situations also the steroids may act as a double edged weapon. In Lyon's study (1968)[41] of patients T.B. pericarditis treated with steriods in addition to anti T.B. therapy responded better than patients who had been treated without steroids.

There is a conflict of experience regarding the place of surgery in TB pericarditis. Removal of the pericardial sac has to be resorted to in cases with persistently raised JVP with associated hepatomegaly, splenomegaly and ascitis. Medical therapy for more than 6 months without significant improvement is also an indication for surgery.

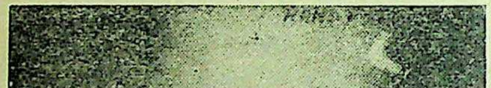

Fig. V. Aortogram showing narrowing of the abdominal aorta in a case of non specific arteritis

The diagnosis of constrictive pericarditis is not always simple; Bœck's triad of a small quiet heart, Kussamaul's sign in the neck, Fredrick's sign, pulsus paradoxus and so on, are not reliable. Constrictive pericarditis has to be differentiated from the restrictive form of cardiomyopathy. Since both conditions produce similar hemodynamic changes clinical assessment alone may not be sufficient and laboratory tests particularly pressure measurements may have to be invoked. If atrial pressures are equal and if pulmonary pressures are below 50 mm of Hg with the patient showing clinical signs of tamponade, the condition is more likely to be constrictive pericarditis. One the other hand, if the atrial pressures are not equal and the pulmonary pressure is above 50 mm. of Hg., one must consider a cardiomyopathy.

Tuberculous disease of the myocardium is extremely rare though occasionally it may occur with tuberculous pericarditis. Spread to the myocardium also occurs from the mediastinal glands. Though sudden death has been reported, in young men who were found at autopsy to have tuberculosis of the myocardium, the incidence is less than 0·5% of the subjects dying of tuberculosis. Tuberculosis of the endocardium has not been reported.

Tuberculous arteritis (Fig. V) has been studied in detail by Sen and his colleagues (1973).[42] In their monograph they have reported a large number of patients with arteritis involving the aorta its large branches. Though this arteritis was initially called, non-specific, the authors have claimed them to be of tuberculous aetiology, based on the presence of a tuberculous focus in some part of the body, tuberculosis in lymph nodes adjacent to the arterial lesion or a strongly positive tuberculin response.

Gastro intestinal tuberculosis :—Gastrointestinal tuberculosis has been recognised ever since the days of *Hippocrates*. In fact, hippocrates used to predict death when subjects with pulmonary tuberculosis developed diarrhœa. Keleb (1868) has produced tuberculous lesions of the intestines by feeding guinea pigs with live virulent tubercle bacilli.

Intestinal tuberculosis.—The majority of stenotic small bowel lesions are tuberculous in origin (Prakash, (1976)[56]. A study by Rangabashyam *et al* (1978)[57] over a period of 7 years on G. I. tuberculosis, has shown it to be more common in females and in the age group of 20—40 years. The involvement of other organs in association with intestinal tuberculosis is uncommon (Anand, 1956[58], Wig, *et al* 1961)[59]; however, mesenteric and peritoneal lymphnodal involvement is not unusual. Isolated intestinal tuberculosis without pulmonary tuberculosis is distinctly commoner in women (Banerjee, 1950).[60] Pulmonary tuberculosis, on the other hand with secondary ulcerative tuberculosis of the intestine is commoner in man (ICMR, study 1958)[61].

Intestinal tuberculosis generally presents between the ages of 20 and 40 years. Tuberculosis may involve any part of the intestinal tract, but the common sites are the terminal ileum and the cæcum (Prakash, *et al* 1978)[62]. The route of entry is by contiguity from neighbouring lymphnodes or from structures like the uterus and adnexa. Prakash (1978)[62] had studied a series of 300 subjects proved by surgery or other procedures and has shown that the incidence of tuberculosis of the G.I. tract is highest in the ileocæcal region, next in the ileum, then the jejunum, and lowest in the duodenum. In the *pediatric age group mesenteric* *adenitis* is commoner than in adults. Intestinal obstruction may be the first compelling symptom, in intestinal tuberculosis and is usually due to adhesions between the bowel loops. Ileal perforation may occur, but it is unusual for generalised peritonitis to develop from it. In fact, sometimes one may find it difficult to make out if there is an ileal perforation at all.

Rangabashyam *et al* (1978)[57] in a series of 200 cases, have shown abdominal mass as a chronic manifestations in 67 subjects, ileocaecal mass being the most common. Rolled up omentum was seen in 30 subjects. Ascites occurred in 94 subjects.

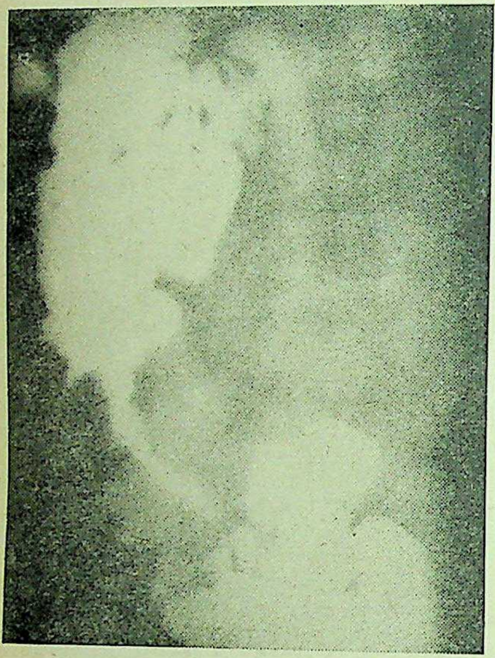

FIG. VI. Barium enema showing narrowing of the lumen of the terminal ileum and pulling up of the cæcum in a case of ileo cæcal tuberculosis.

Abdominal pain may be due to enteritis, whereas abdominal distension may be due to subacute intestinal obstruction. The occurrence of jaundice is uncommon in G. I. tuberculosis and if it occurs is due to acute hepatic invasion and not due to lymph nodal involvement in the porta hepatitis. A liver biopsy may be very useful.

The abdominal mass of intestinal tuberculosis at times creates difficulty in differentiation from carcinoma or loculated ascites.

Constitutional symptoms like fever, malaise, poor appetite etc. were frequent in Rangabashyam's[57] series; 35 per cent of woman had menstrual disorders. In the Institute of Obstetrics and Gynæcology, Madras, the incidence of tuberculosis of the uterus and adnexa has been low. There are reports of isolation of tubercule bacilli after D and C. and tuberculous endometritis may be one of the causes of menstrual disturbances.

Rarely, tuberculous lymph nodes near the duodenum may cause extrinsic compression and may mimic peptic ulcer. Tuberculosis of the appendix is a curiosity. In fact 3 cases out of 325 cases operated for appendicitis showed evidence of tuberculosis in Government general hospital from 1974-77 (Madanagopal 1978).[63] Histologically caseation of the appendix points to a tuberculous etiology but the mere presence of granulomatous reaction in the appendiceal wall will not be adequate proof of tuberculosis of the appendix.

Tuberculosis of the G. I. Tract is a great mimic. It may mimic ulcerative colitis or malignancy. For example, in a young woman with radiological evidences of involvement of the terminal ileum, it is less likely to be tuberculosis and necessitates exclusion of other causes of stricture, like malignancy etc.

Peroral intestinal mucosal biopsy as a diagnostic procedure has not been found to be useful. Peritoneal biopsy in subjects with or without ascites when the peritoneum is involved, is useful, as also concurrent tell tale evidence of tuberculosis elsewhere. Koch's phenomenon with the tuberculin test, with findings at laparoscopy or peritonoscopy is often helpful confirming the diagnosis.

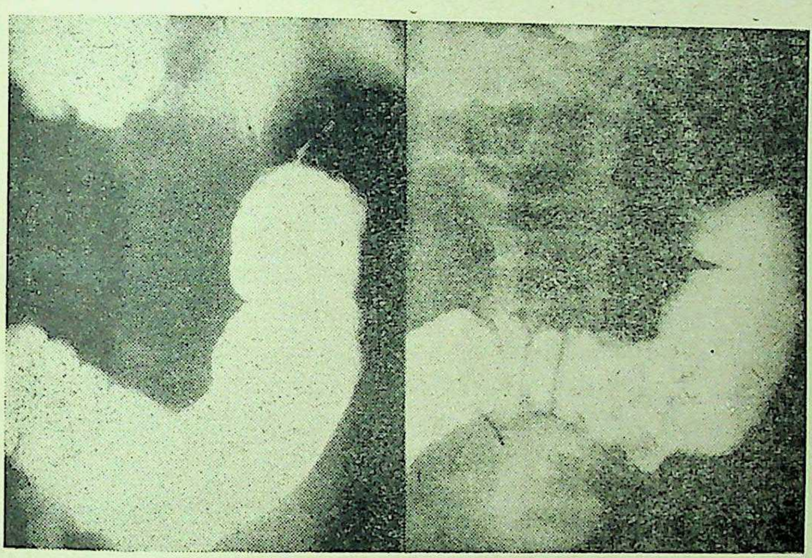

FIG. VII. **Barium enema showing filling defects in the cæcum in a case of tuberculoma of the cæcum**

Intestinal obstruction is a major component of the illness. The incidence of obstruction ranges from 12—60% (Anand 1966)[58] In India about 3—20% of all intestinal obstructions are due to tuberculosis. (Bhansali and Sethna 1970,[64] Jain and Prasad 1963)[65]. About 5—7% of gastrointestinal perforations excluding perforation complicating appendicitis are due to tuberculosis (Bhansali 1967).[66] Tuberculosis of the small intestine is the commonest cause of malabsorption and at times, it becomes difficult to differentiate it, in the tropics, from sprue (Chuttani 1969)[67].

Regarding radiological criteria for diagnosis of intestinal tuberculosis, rapid transit due to local spasm and irritability (Stierlin's sign) and sluggish motion due to fixation and rigidity and widened spaces between bowel loops are important. Bhansali *et al* (1970)[64] have found positive radiological evidence of small intestinal tuberculosis in only 27 patients out of 92. The common findings were strictures with proximal dilatation, floculation and fragmentation of the opaque meal. At laparotomy the most important findings have been strictures and ileocecal mass (Rangabashyam 1978)[2]. The complication of enterolithiasis with stricture has been described by Taneja (1960)[13] and Prakash, *et al* (1963)[14]. Tuberculous lymphadenitis has also been shown to cause duodenal obstruction (Chawla, 1969)[15].

Tuberculosis of the stomach.—Tuberculosis of the stomach is rare though in advanced cases of pulmonary tuberculosis, the aspirated gastric content may show AFB, without gastric involvement. The symptoms associated may be from gastritis or peptic ulcer rather than tuberculosis of the stomach itself. In subjects where tuberculosis has produced by itself ulceration of the stomach, considerable difficulty is experienced in differentiating from peptic ulcer and malignant ulcer over which tuberculosis has supervened. A few workers have aspirated gastric contents for evidence of T.B. in the stomach.

One important disease which can mimic tuberculosis of the ileum is regional ileitis (Crohn's disease)[71]. The differentiation between the conditions becomes essential on account of the similarity of the location of disease and symptom., and the different lines of therapy. Ascites is distinctly commoner in tuberculous disease whereas anal lesions and fistulæ are commoner in Crohn's disease. Appearance of sarcoid granuloma in the gut wall favours Crohn's disease; caseating granuloma of the mesenteric nodes however favour tuberculosis.

There have been different view points in respect of preoperative anti-tuberclous therapy. In intestinal tuberculosis requiring surgery, Atma Prakash (1978) suggests, it is better not give anti-tuberculous therapy, when one has made the diagnosis of ileocecal tuberculosis with subacute obstruction and surgery is indicated since it may further narrow the gut and precipitate obstruction. However, many other workers believe that preoperative anti-tuberculous therapy is useful in preventing dissemination at surgery.

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[To be continued]

DIABETES' EFFECT ON VASCULATURE

A new technique called vitreous fluorophotometry is enabling researchers to detect retinal complications of diabetes at an earlier stage than was previously possible. Diabetic retinopathy is blamed for more than 15% of all new cases of blindness (more than 50,000 annually). This technique requires a conventional light-and-microscope slit lamp. One eyepiece has a fiberoptic probe connected, to a camera and to equipment that measures the concentration of fluorescein dye in the blood or vitreous. The dye is introduced in the patient's arm intravenously. It absorbs light at certain wavelengths changing from orange to fluorescent green as it picks up energy. Thus, it is easily detected, even at low concentrations. Higher fluorophotometry values, that is, greater concentrations of dye in the vitreous fluid, so far have been found mostly in long term diabetic patients whose disease is not well controlled metabolically. Higher values are associated with the appearance of lesions in the retina. Cunhavaz says vitreous fluorophotometry seems to hold promise for early detection of retinal complications of diabetes, for correlation of this vascular complication with the patient's metabolic state and for gaining additional understanding of pathological changes in various other organs.—(*J.A.M.A.*, 24.11.1978).

CHYLOUS REFLUX

(A Case Report with review of literature)

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A case of chylous reflux is reported for its rarity with a review of literature. It is important to remember that frequently patients with this complaint may present themselves to dermatologists.

Introduction :—Lymphatics along with the lymph nodes subserve many important functions such as maintenance of plasma proteins, act as barriers against infections and as an important limb of the immunological system. Lymphatics may be affected either structurally or functionally. Chylous reflux is a fuctional derangement of the lymphatics. A review of liturature shows that the only organised study of this disorder has been done by Kinmonth and Taylor. They classified the chylous reflux into two types :—Type I with dilated megalymphatics presenting as chylous lymphœdema with discharging fistulæ or vesicles. This may be associated with congenital nevii. The condition effects both sexes. The site of reflux is usually in the lower limbs and external genitalia. In one case the discharge of chyle was from under the toe nails. Rarely the fistulæ may communicate with a viscera but not associated with any metabolic changes. Lymphangiography will reveal dilated megalymphatics in connection with cisterna chyli.

Type II characterised by aplasia or hypoplasia of the main lymphatic trunks presenting itself as chylous ascitis, chylous thorax and œdema of several limbs. Deficient absorption of chyle leads to hypoproteinæmia, hypovitaminosis and other nutritional deficiencies. Lymphangiography reveals absence or hypoplasis of the abnormal lympatics[1, 2, 3].

Treatment :—In type I the ligation or removal the dilated abnormal lymph channels will cure the condition. In type II surgical treatment is not possible. Symptomatic treatment with replacement of proteins, minerals and vitamins is necessary.[1, 3]

Case report :—Mr. P. presented with multiple vesicles over the scrotum and wetting of the under clothes spontaneously and after scratching, due to a discharge from the vesicles of 10 years' duration. The patient was definite that the discharge after a good meal was profuse. There was no history suggestive of filariasis;

no history of chyluria or diarrohea, no systemic symptoms, no bleeding diathesis. No weight loss. He had undergone operation for bilateral hernia 15 years earlier.

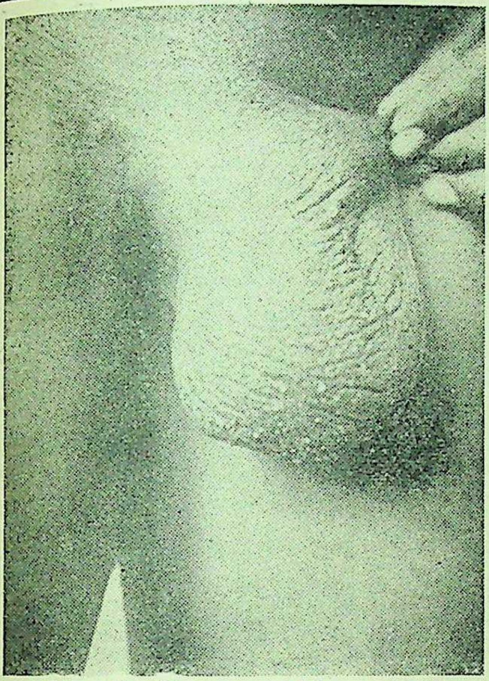

FIG. I. Shows vesicles on the scrotum

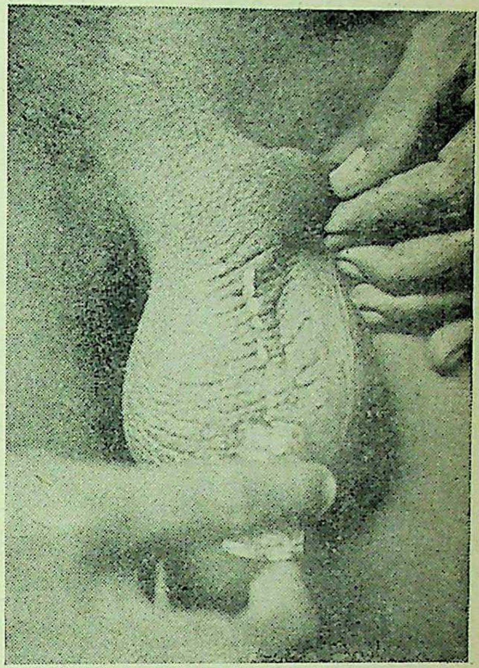

FIG. II. Trickling of milky white fluid after puncturing the vesicle

On examination.—Multiple yellowish white vesicles varying in size from a pin head to 3 mm. size, were seen over the scrotum. On puncturing the vesicle, a milky white fluid trickled from the vesicle and we were able to collect about 10 cc. of the fluid. There was no œdema of the scrotal skin or lower limbs. Systemic examination revealed no abnormality. Rectal examination revealed no abnormality.

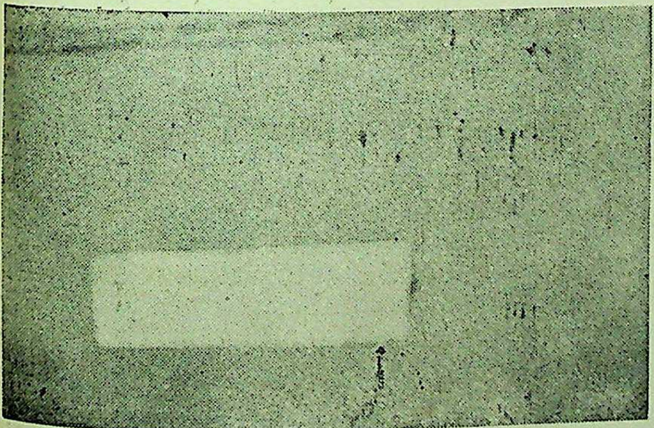

FIG. III. Electrophoresis showing chylomicron and pre-beta bands.

Investigation.—T. C. 10,000 cells/cmm. D.C. 60 L. 38 E. 2 ESR Normal; Urine Alb—Nil Sug—Nil. Deposits revealed no fat globules.

X-ray Chest-normal; X-ray abd—Normal.

The patient did not accept to have a lymphangiography, in spite of our repeated requests.

Examination of the fluid collected.—By either solubility test and oil red O staining the presence of lipid was confirmed. Paper electrophoresis by method of Lee and

Hatch with slight modification showed the presence of a band in chylomicron and pre beta region evidencing the presence of triglycerides.

Serum calcium—9 mg.% ; bactriological examination—no organism detected.

Discussion.—A patient presenting with chylous vesicles over the scrotum which is a rare case is presented. The diagnosis was made on the basis of macroscopic, microscopic and bio-chemical investigations which confirm that the fluid discharged was chyle. Since the patient was not willing for lymphangiography we were not in a position to do the same. The absence of visceral effusion, hypoproteinemia and other metabolic disorders suggest that this is Type I chylous reflux. There need not be any structural obstruction to the thoracic duct or major lymphatics to diagnose chylous reflux, since Kinmonth and Taylor's sophisticated radiological studies have not revealed any structural obstruction such as filarial, neoplastic or other sclerosing process. The absence of oedema and rugosity of the scrotal skin rules out the possibility of lymph scrotum.

Acknowledgement.—We thank the Dean, Tirunelveli Medical College for permitting us to publish this article.

We thank the Department of Radiology and Bio-Chemistry for the help they rendered us to prepare this article.

We thank Dr. A. B. Jaya Raj B.SC., M.B.,B.S., for his help in taking clinical pholographs.

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EARLY GROWTH RETARDATION IN DIABETIC PREGNANCY

Thirty-five insulin dependent diabetic women with reliable menstrual histories were examined by ultrasonic scanning in the 7th, 14th weeks of pregnancy. Judged from crown-to-rump length the fetuses were on average 5·4 days smaller than those in a local normal series. Ten of the fetuses were nine days or more smaller than normal and had a lower mean birth weight than the others, though the mean gestational age was similar. Maternal diabetes was not more severe in this group, but only two of the mothers had attended a special hospital for control as compared with 19 of the remainder.

Although babies of diabetic mothers are often overweight, there appears to be a sub group of cases in which fetal growth is retarded early in pregnancy, leading to low birth weight and possibly a higher incidence of congenital malformations.—(*British Medical Journal*, 6th January, 1979).

MUMPS POLYNEUROPATHY

(A Case Report)

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MUMPS is an acute infectious disease due to *myxovirus parotidis* which has a predilection for the salivary glands, mature gonads, pancreas, breast and the nervous system. It is worldwide in distribution commonly occurring between the ages of 5 and 15 years. Though mostly self limited it could be occasionaly serious with a fatality rate of 1·0 to 3·4 deaths per 10,000 cases (C. D. C. Report, 1978). Development of nervous symptoms in the course of mumps is an old observation having been recorded by Hamilton in 1781. Neurological complications of mumps include meningitis, meningoencephalitis, myelitis, and neuropathies—cranial or peripheral.

Aseptic meningitis remains the commonest nervous complication of mumps. Though cerebrospinal fluid abnormalities are observed in 10% of cases, clinical manifestations are rare and the reported incidence is 0·4 to 1·0 per 1,000 cases (C.D.C. Report, 1978).

Meningoencephalitis is a quite common complication of mumps. Bristrain *et al* (1972) reported a case of fatal meningoencephalitis and mumps virus was recovered from postmortem CSF and postmortem testicular tissue. They further reviewed 70 cases of meningoencephalitis from literature. John, *et al* (1978) reported a case of mumps meningoencephalitis without parotitis.

Several cases of myelitis presenting as paraplegia have been reported in literature (Warrington, 1914); McKaig and Woltman, 1934). Hemiplegia, hemianaesthesia, chorea, myoclonus, ataxia of the cerebellar type are occasionally described but very rare. Localized paresis with atrophy of muscles has also been reported (Janbon *et al*, (1929).

Polyneuropathy-cranial or peripheral occurring in association with mumps have been recorded in literature in a small number of cases usually developing two to three weeks after the primary symptoms. In all reported cases there had been flaccid paralysis of all four limbs and in some cases cranial nerve palsies have been reported.

We present an interesting case of polyneuropathy due to mumps in which neurological symptoms were the presenting features while parotitis followed later on.

Case Report.—A 30 year old, Hindu female was admitted to Irwin group of hospitals, Jamnagar on 16-2-1979. She was in good health till 7 days earlier. Then she developed tingling and numbness first in the lower limbs and then in the upper limbs. After 24 hours she noticed weakness and difficulty in walking which increased gradually. She was unable to walk and stand for the past 24 hours before admission. All the symptoms were more marked in the lower limbs. There was no history of convulsion, vomiting or visual disturbances. Bladder and bowel functions were not affected. Personal, obstetric and menstrual history was non-contributory.

On examination, the patient was a thinbuilt, young woman. She was fully conscious with a body temperature 37·6° C ; pulse and respiratory rate being 84 and 18 per minute respectively. Blood pressure was 118/82 mm. of Hg. Examination of the motor system revealed muscle power grade III in both lower limbs with comparatively increasing weakness below the knee, while muscle power was of grade IV in the small muscles of hands. Sensations of all modalities were impaired below the knees and were lost over the feet and toes. Slight impairment of sensations were also observed over the palms. Planters were flexors. Ankle jerks were sluggish. Other deep reflexes were normal. There was no cranial nerve involvement. Signs of meningeal irritation were absent. Examination of cardiovascular, respiratory and abdominal system did not reveal any abnormality.

Total leukocytic count was 10,000/c.mm , with polymorphs 68%, lymphocytes 23%, eosiniphiles 4%, monocytes 4% and basophils 1%. Hæmoglobin level was 13 g. % with normocytic normochomic red blood cells. Urine analysis showed no abnormality. Skiagram of chest, cervical spine, lumbo-sacral spine, and skull were normal. Fundi were normal. CSF examination showed normal tension, proteins 35 mg.%, sugar 70 mg.% chloride 710 mg.% and lymphocytes were 4 per field. Serological tests for syphilis were negative. Glucose tolerance test was normal. Test for urinary porphobilinogen was negative.

With these findings the patient was diagnosed as having acute infective polyneuritis and was put on broad spectrum antibiotics and steroids. Patient developed painful bilateral parotid swellings and fever on the 10th hospital day. On further direct inquiry patient gave a history of mumps in two family members and mentioned about some cases of mumps in her village. In view of these, the patient was diagnosed to have peripheral neuritis because of mumps. Patient started improving with the treatment and was quite well when discharged after three weeks. Follow up examination after three months revealed no abnormality.

Discussion.—Clinical evidence of involvement of the nervous system in mumbs occurs in the form of mild meningitis or encephalitis in a small number of cases. Other neurological complications include an encephalomyelitis with cranial or peripheral nerve plasy, myelitis and peripheral neuritis (Merrit, 1959).

Mono or polyneuritis occurs rather more often, sometimes as tetraplagia (Pitres and Marchanad, 1922) or may be combined with cranial nerve lesions (Collens and Robonowitz, 1928). Myelitis variants are described by McKaig and Woltman (1934). Their nature at time is more that of meningo-radiculitis (Janbon, *et al*, 1929: Church, 1946).

Collens and Robinowitz (1928) have reported flaccid paralysis of all four limbs and some cranial nerve plasy which mainly affecting the facial nerve. In a small group of patients the picture resembles polyneuritis, *i. e.*, paralysis of all four limbs without sphincter disturbances, loss of cutaneous sensitivity or muscle tenderness. In the present case there was polyneuritis with sensory—motor involvement without affecting the sphincters. However, involvement was more prominant in the lower limbs in the case presented here.

Our patient presented with neurological symptoms and developed parotitis after 10 days. In most instances neurological manifestations appear when parotitis is at its height, but may be delayed until convalescence. In some cases it may actually precede the parotitis. Tailliens (1928) studied 19 cases of mumps meningitis and reported neurological complications developing after parotitis in 10 cases, with parotitis in 4 cases and before parotitis in 5 cases. Wallgrain (1927) pointed out that neurological complications in mumps may be present without any clinical evidence of parotitis or orchitis. In such cases diagnosis can only be made by serologial studies.

Pathogenesis of neurological complications has been described as both a primary destruction of the neurons by the virus with neuron chromatolysis and other charactaristic changes of acute viral infection of the central nervous system and as a post-infectious encephalitis with demyelination; in the former parotitis occurs at the same time or follows encephalitis. In the latter the neurological complications follow parotitis by about 10 days. Our case belongs to the first category. In the case presented here the diagnosis was based on clinical and epidemiological data. However, the definitive diagnosis of mumps depends on isolation of mumps virus and serological test of antibodies in paired sera. The diagnosis of mumps during an epidemic is usually obvious.

The treatment consists mainly of physiotherapy and supportive therapy. However, it is believed that steroids may be given without any harm. Walkman (1971) reported that if steroid therapy is started within 48 hours of the onset of symptoms dramatic recovery occurs within a few hours in half of the cases Progress of the disease may be arrested in others. Our case showed quick recovery after the administration of steroid, therapy.

Acknowledgement.—We are thankful to Dr. M. N. Jindal, Dean, M. P. Shah Medical College. and Irwin group of hospitals, Jamnagar for allowing us to publish this paper.

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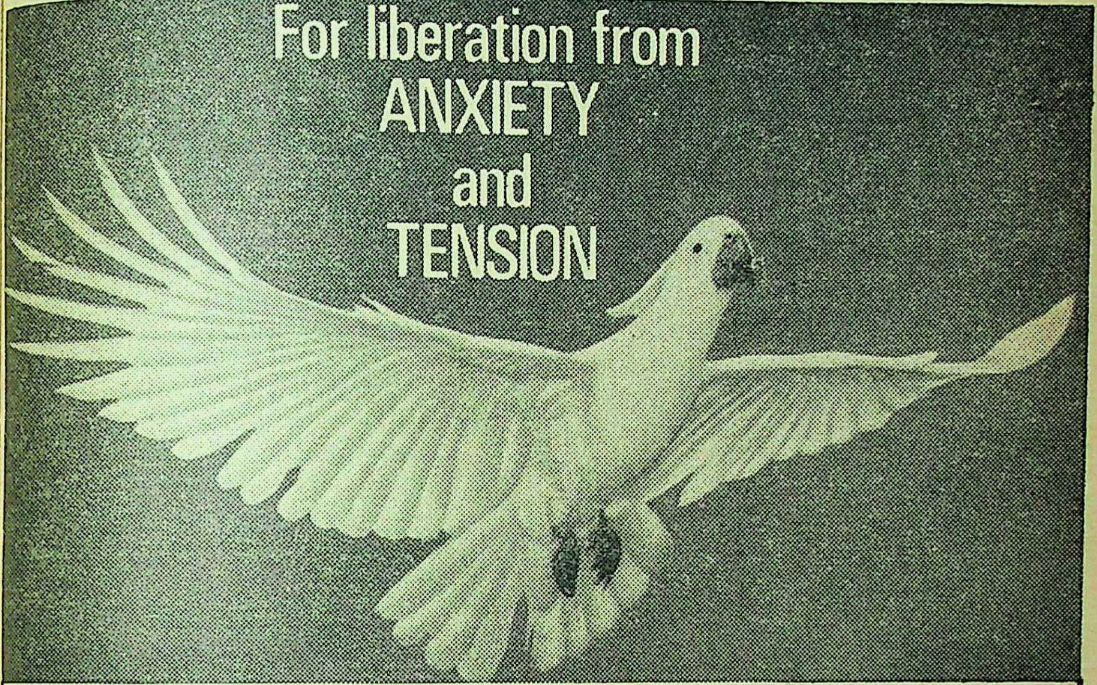
VITAMIN C AS A URINARY ACIDIFIER

Ascorbic acid is recommended as one of the adjunct urinary acidifiers during methenamine mandelate (Mandelamine) therapy, because an acid urine is essential for antibacterial activity of these compounds with maximum efficacy. When Vit. C is used as a urinary acidifier 4 to 12 grms per day are recommended and P.H. indicator paper should be used to regulate dosage. Although the value of ascorbic acid as a urinary acidifier, has been questioned, it appears to be effective when used in combination with methenamine salts, provided that large amounts (from 4 to 12gm. per day) of ascorbic acid are administered at intervals of every 4 hours around the clock.—(*New York State Journal of Medicine*. Sept. 1978).

LINK BETWEEN DOGBITES AND SPLENECTOMY

One of the newest is an organism called D.F_2 recently recognised as the cause of an occasionally fatal infection in persons whose immunologic defenses are weakened by chronic illness or splenectomy. There is some evidence that this organism is transmitted to humans by bites or scratches from dogs, in some of whom it may form part of the resident oral flora. Ten of the patients had had a recent dog bite, and four had contact with dogs in the few days before becoming ill. All patients had fever, eight showed leukocytosis, seven had cellulitis at the site and ten had increased banded cells in different blood smears. All organisms grew slowly on blood agar and all cultures yielded non-motile Gram-negative rods without spores. They were susceptible to most antimicorbial drugs tested, including penicillin, chloramphenicol, tetracycline and carbenicillin.—(*J.A.M.A.*, 19th January, 1979).



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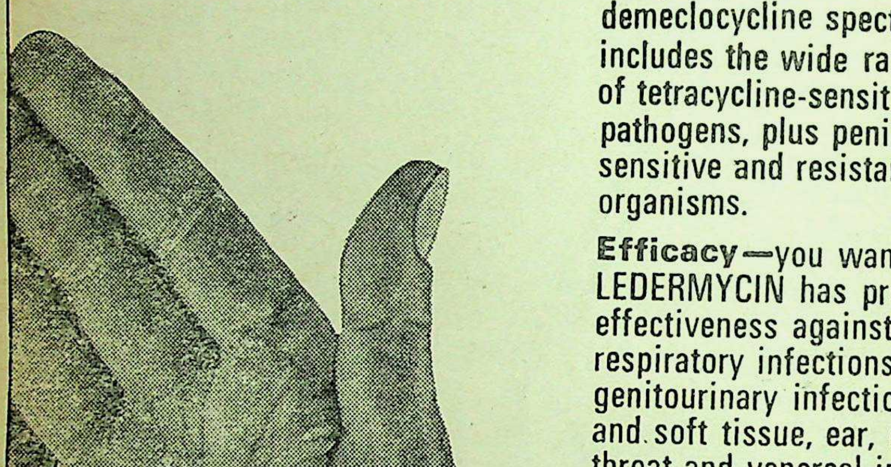

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OVARIAN MALIGNANCY—AS A CAUSE OF RECTAL BLEEDINGS

(Report of an unusual case)

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INTRODUCTION :—The importance of ovarian tumours cannot be over-emphasized for until they reach a considerable size they tend to be symptomless and therefore remain undiagnosed. Ovarian cancer is third in frequency among female genital cancers and accounts for 15 per cent of all genital neoplasms.

Given below is an account of an unusual case of ovarian carcinoma which presented with rectal bleeding.

CASE REPORT :—Mrs. A. B., a muslim woman aged 40 years with four children, attended the hospital in December 1976, with the complaint of rectal bleeding. On rectal examination second degree piles were discovered. The pile masses were injected and the patient discharged.

She reported back to the hospital after two weeks with a recurrence of bleeding per rectum. Rectal examination revealed thrombosed pile masses. On further examination a vague mass was felt in the Pouch of Douglas. On vaginal examination there was fullness and slight tenderness in the posterior fornix.

A sigmoidoscopy was done. The sigmoidoscope passed easily upto 10 cms At about 12 cms. from the anal verge raised edges of the rectal mucosa was seen. Dark altered blood oozed from this area. A biopsy was taken from this area. The mucosa of the ampulla of rectum was œdematous. The pathology report showed presence of adeno carcinomatous tissue. There was no evidence of rectal mucosa.

In the second week of January 1977, a laparotomy was done. Carcinoma of the left ovary adherent to the rectum was discovered. On further dissection the left ovary was found to be opening into the rectal ampulla (as shown in Figs. I & II, *over-leaf*). In view of the malignant ovary perforating into the rectum an abdominoperineal resection with total hysterectomy was done. There were no glands present and the liver was free from secondaries.

The post-operative period was uneventful. The patient had chemotherapy with 5 Flurouracil and Mitomycin for 5 weeks.

On a follow up up to December 1978, the patient was still doing well with no evidence of recurrence. The liver scan did not show any secondaries and the ESR was normal.

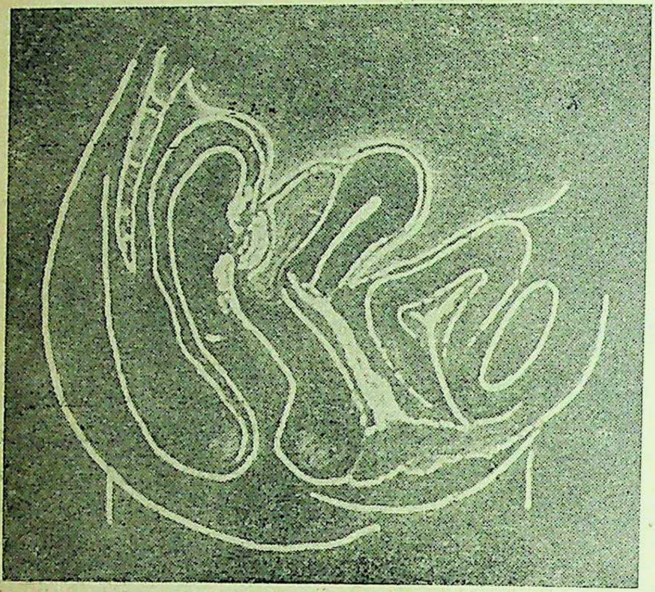

FIG. I.

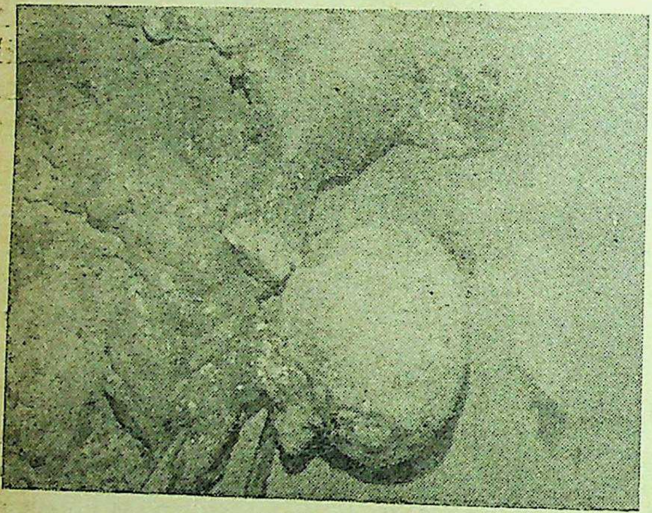

FIG. II.

Discussion.—Ovarian carcinoma usually presents as a hard irregular mass palpable per abdomen. But often it remains silent and undiagnosed until its presence is made known by the onset of one of its complications. In the case reported it manifested as rectal bleeding but it may also manifest as any one of the following complications.

1. *Torsion, rupture and haemorrhage into the cyst* :—Are common and will present as acute abdominal pain with some degree of shock.

Rupture of a mucinous cystadenocarcinoma results in the dissemination of the mucinous material throughout the peritoneal cavity. This condition is called "Psudomyxoma Peritoneii". (Sandenbergh, H. A., *et al*).

2. *Intestinal obstruction* :—The incidence is less than 5 per cent. It is common in advanced or recurent disease. The tumour frequently involves multiple segments of intestine.

3. *Carcinomatous ileus* (*Brunschwig*) :—In some patients with evidence of intestinal obstruction the findings at laparotomy show the intestine and mesentery to be grossly infiltrated with tumour so that although the intestine is patent it is functionless.

4. *Intestinal fistulae* :—This may occur spontaneously but frequently follows surgery with trauma to the intestinal wall.

5. *Haemorrhoids* :—Invasion of the rectal wall may result in piles.

6. *Urinary tract involvement* :—Urinary retention may be caused by impaction of the tumour in the pelvis.

Hydronephrosis may result from extension of the ovarian cancer into the urethral wall or from mechanical obstruction at the pelvic brim or higher.

Perforation into the bladder causes hematuria (Alfthan OS).

7. *Involvement of the uterus* :—This results in bleeding and discharge per vaginum.

8. *Effusions* :—Effusion is a common complication and occurs in the abdomen, pleural cavity and occasionally in the pericardium.

9. *Pressure on the inferior vena cava* :—This causes unilateral or bilateral lower limb œdema and varicosities.

10. *Involvement of the lumbar and sciatic plexus* :—This causes intractable pain in the back and lower limbs.

11. *Foetal virilisation due to maternal Krukenberg tumour (R. J. Bell)* :—These tumours usually produce œstrogen and progesterone, but during pregnancy they cause virilisation of both the mother and the fœtus. It is suggested that ovarian tumours secrete androgens in response to human chorionic gonadotrophin stimulation (Haymond and Weldon).

12. *Diffuse intra-abdominal calcification* :—This is commonly associated with serous cystadenocarcinoma of the ovary and indicates active metastatic disease.—(Leslie Menuck, M.D.).

Conclusion.—In this unusual case of ovarian carcinoma which presented as rectal bleeding, a diagnosis of piles was first made in view of the second degree piles which was present. But the recurrence of bleeding and the altered blood led to a sigmoidoscopy being done and this helped to clinch the diagnosis.

The most likely cause for this mode of presentation may be bleeding inside the overy with secondary infection which must have precipitated adhesion and perforation into the rectum. In the above case there was bleeding and passage of tumour tissue through the rectum. No such case has been previously reported from Madras.

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POLIOMYELITIS IN INDIA AND IMMUNISATION BY POLIO VACCINE

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POLIOMYELITIS is an acute viral infection occurring sporadically and in epidemics and characterised by varying degrees of neuronal injury with special localisation in the anterior horns and the motor nuclei of the brain stem. There is wide range of clinical manifestations from inapparent infection to flaccid paralysis of many muscle groups with the possibility of death from asphyxia and involvement of vital centres in the brain stem.

Etiology.—Poliomyelitis is caused by a virus. Much more is known about the polio virus than about the predisposing factors which influence the clinical outcome.

The poliovirus is with the Picorna virus (Pico very small, RNA—Ribonuclic acid) and is composed of a core of RNA and a protein coat whose total diameter is 28 milimicron. It was the first animal virus to be crystallised (1955). The lack of lipid renders the virus resistant to ether, chloroform, bile and various other detergents. Polio virus is inactivated by strong oxidants, chlorine, formalin, and ultraviolet irradiation.

Fortunately, there are only three serotypes—I, II and III. Within each type there may be different strains, some of which are more virulent and some more immunogenic than others. To date, the largest epidemics of the disease are ascribed to type I strain; some outbreaks have involved simultaneous occurrence of more than one type, and an occasional paralytic patient is found to have two sero types of polio-virus The occurrence of 2 separate paralytic illnesses each due to a different serotype is rare but yet documented.

History and geographical distribution.—Epidemics of paralytic poliomyelitis have been described only in the past century. The first reference in the medical literature appeared in 1789 (Underwood in England). During the nineteenth century the disease was regarded as a rare affliction of infants, and a small groups of isolated cases was accumulated by Heine in 1840 in Germany. The epidemic form was not clearly described until, 1890 in Europe, (Medin in Stockholm) and 1894 in America (Caverly in Vermount).

In India the first report of epidemic poliomyelitis was that by Coelho in 1938 in Bombay. Since then, more epidemics have occurred at various times in Andhra Pradesh, Gujarat, Maharastra, Rajasthan, Tamil Nadu, Uttar Pradesh and Delhi. Poliomyelitis was made notifiable for the first time in Bombay and Delhi in 1949 and in Punjab, Assam, Madhya Pradesh and Uttar Pradesh in 1952 (ICMR Bull, 1975). An editorial review of poliomyelitis, the epidemic in the journal of Indian Medical Association, (1964) states that the reported incidence of the disease is 1 per 10,000 population in all ages and 1 per thousand under 10 years of age.

Currently, it is widely recognised that poliomyelitis is a not too infrequent disease in India, as thought of before. Cockburn and Drozdov (1970) reported a three fold increase in poliomyelitis from 1961 to 1965 as compared to 1951 to 1955 in 45 out of 71 tropical and semitropical countries. In India no authentic data is available about the number of cases occurring each year. Incidence of poliomyelitis in India in 1958 was 10 per 100,000 population (Gharpure PV) as published in a paper by Gharpure at the Fourth International Polio Conference in 1958.

Bildhaiya, *et al* (1974) gave the incidence as 33·9 per 100,000 population in 1971 in Bhopal. Whereas a house to house survey for detecting residual poliomyelitis in Gujarat by Jhala, *et al* (1976) revealed an incidence of 2·1 per one thousand population in an urban and 2·8 per thousand in a rural area near Ahmedabad. This is a higher incidence rate that that reported by the former workers from Bhopal.

Epidemics of paralytic poliomyelitis have been reported by various Indian workers Bombay and many big cities are experiencing waves of epidemic of poliomyelitis. Paul, *et al* (1964) reported an increase in the incidence of poliomyelitis in Delhi. Similar observations have been made from Chandigarh (Mahajan, *et al* 1972), Bhopal (Bildhaiya, *et al* 1974), Vellore (Ratnaswamy, *et al* 1973) and Delhi (Gujral, *et al* 1971). Increased number of cases of acute poliomyelitis were also observed in alternate years. This was explained by Basu (1968) that babies born during an epidemic year acquire immunity by getting subclinical infection, whereas babies born in non-epidemic years do not get this immunity and are more prone to infection when they reach the susceptible age.

Age incidence :—Poliomyelitis in tropical countries is still a disease of young children. Maximum cases occur below 5 years of age. This observation is almost similar to various studies conducted in Bhopal, South India & Delhi. In Gujral's study of cases attending the Kalawati Saran children Hospital New Delhi, the incidence of paralytic polio occurring in infants below 6 months was 6·6%. In Sehgal's and Oberoi's study the youngest case was of the age of 2 months. During the epidemic in Dohad, 89·4% casses occurred in the age group of three years and below.

Gharpure in 1962, reported that in Bombay city almost all cases of paralytic polio were found in age group of 5 years and below. During the epidemic in Andhra Pradesh the age group involved had been up to 4 years with peak at years. Survir Singh, *et al* 1963 reported that during an epidemic in Udaipur 71% of the total 75 cases were under 3 years of age. Serological studies from the population of Bombay representative of all age-groups indicated that in the age group above 9 years, antibody content against all the three types of viruses is in significant amounts (Gharpure 1954). In some of the recent surveys carried out in developed countries of the world, poliomyelitis has been reported in elderly age groups. During the epidemic of poliomyelitis in the Eskimos all age groups were effected and the lowest incidence was in 0 to 6 months age group. Reason of involvement of all age groups in Eskimos is that they stay scattered in the region and therefore this population is less exposed to the virus.

A very low incidence of the disease in infants below 3 months is explainable on the basis of the possible naturally acquired passive immunity from the mother. Very low incidence in the higher age group in our country would be explained on the basis of immunity acquired through more frequent exposures to polio virus during childhood in the undeveloped countries with poor environmental sanitation. In developed countries, however, with higher standards of sanitation, the exposure to polio viruses during childhood has become infrequent and the individuals of the higher age group remains susceptible to paralytic disease. This has been more apparent from the findings in some affluent countries where 25 to 30 % of the individuals were adults. (ICMR Bull., 1975).

Seasonal prevalence of poliomyelitis in India.—Seasonal variation in the insidence of paralytic poliomyelities is very striking. According to ICMR data published in 1975, 60% of the cases are recorded during June to September. An analysis of 15 years data on children attending the K.S. Children Hospital, New Delhi it was observed by Gujral and his co-workers that maximum cases occurred during July to October, the period of maximum heat and humidity which is best for poliovirus to flourish.

Even during the winter months whenever there is rainfall it is followed by an increase in the number of cases of paralytic poliomyelitis, showing thereby the greater importance of humidity. In the 1971 and 1975 epidemics of Delhi, there was an increased number of cases from March onward due probably to early and prolonged rainfall during these years. In countries with distinct seasons like Canada, U.S.A. Japan, Australia and most European countries, incidence of poliomyelitis has been observed to be highest during summer and early fall. In countries like UAR, Mexico and certain places in India like Vellore, where seasons are not well marked, polio occurs throughout the year. (W.H.O. report, 1964).

Sex incidence:—So far as sex predilection to poliomyelitis is concerned the data of various workers do not have unanimity. Sehgal *et al* observed a higher prevalence rate in male children—the M. F. ratio being 2·4:2. Male preponderance rate has also been reported from Bangalore and Dohad. However, Gharpure *et al* (1964) have reported from years of polio research in Bombay that there is no particular predilection for either sex.

Socio economic status:—Sehgal and Oberoi's study reveal that out of a total of 182 cases 97·8% belonged to middle and upper middle class families. This has been observed by other workers also. Gupta and Bhatia (1968) found significantly lower level of neutralising antibody titre against poliovirus in children from upper middle class families.

Virological studies:—Made by Indian Workers found a higher incidence of Type I virus. Gujral *et al* who studied 133 fæcal samples in paralytic cases during the first 8 days of illness found positive results in 88 cases giving a percentage of positive results at 66 percent. Out of these 88 positive samples Type I was isolated in 54 (*i.e.* 61·36%). Type II was isolated in 1 (1·14%) and type III in 6 samples (6·80%). The higher preponderance of type I virus was also confirmed but sehgal and Oberoi in their study of 182 cases in Delhi.

Clinical presentation:—History of fever was the most frequent symptom in early stage of the disease. Athavale (1960) noted fever in 95% in his series, of 175 cases. In a series of 1125 cases of polio studied by polio-research unit, Bombay, fever was recorded in 80% of the cases. In 100 cases studied by Samuel and Bhagat (1966) 75% gave history of fever. The study showed that a history of fever is an important clinical symptom at the time of onset of the disease. Other symptoms next to fever as, noted by various workers, are diarrhoea, constipation vomiting, muscular spasm, weakness of voice, urinary retention, swallowing difficulty and disturbance of sensorium. Sehgal *et al* emphasised that neck flop was a very important symptom. He observed this feature in 150 cases out of a total of 182 in K. S. Hospital in the 1971 epidemic of Delhi. They further observed mild degree of hypertension in 66% cases.

Types of paralytic involvement:—Spinal type of involvement is the commonest one. The following table shows the types of paralysis noted by the different workers.

No of cases studied		Gujral *et al* (1977) 550	Oberoi *et al* (1977) 182 New Delhi	Gujral *et al* (1971) 507 Delhi
Spinal	...	92·72%	73·7%	90%
Bulbospinal	...	5·26%	22%	5%
Bulbar	...	1·84%	4·4%	Facial involvement 4·3%

In more than 70% of cases of Sehgal's series paralysis developed from the 2nd to the 5th day of fever. High temperature, neck flop, and paralysis of more than two limbs, bulbar and bulbospinal forms were consistent with the severity of the disease. Similar observations were reported by Podar too in his analysis of 620 cases from Bombay.

Prognosis.—Mortality rate in acute poliomyelitis is reported to be of the order of 10% by various workers. In the series studied by Sehgal and Oberoi, the mortality rate was 14·3% in severe cases of poliomyelitis. But, it would have come down to 2·2% had all the mild and moderate cases treated from O. P. D. been included. Poddar (1972) observed mortality rate of 10·6% in his series of 620 cases which had only 93 cases with severe type of disease. Ratnaswamy reported a mortality of 5 8% from South India. In Gujral's study 9 children with generalised spinal involvement and progressive repiratory muscle paralysis died out of a total death of 15 children (60%) .33·3% of deaths in his series were due to bulbospinal type. Sehgal and Oberoi found that mortality was maximum in the bulbospinal type of disease where lower cranial nerves were involved in addition to the motor nuclear of the spinal cord. Most of the patients in his study expired within 24 to 48 hours of admission. The death occurred because of asphyxia due to pooling of secretion in the throat. However, in those patients where timely intubation or tracheostomy was done to maintain a clear airway, mortality could be averted to some extent. So far as recovery of muscle power in the peripheral muscles is concerned, a definite relationship exists between the severity of initial paralysis and final recovery. This was shown by long term study of Lassen *et al* who concluded that in a muscle which has been completely paralysed chances of recovery is only 1·4%; muscles which are not completely paralysed at the end of the acute period 20% became normal and 50% gained functional valve. In muscles which shows slight decrease in strength chances of complete recovery are 90%.

Gujral and his colleagues found that in the lower limb, knee-extensors were most commonly involved (43·6%) followed by foot invertors (34%). In the upper limb deltoid muscle was most commonly involved.

Some special observations.—1. *Poliomyelitis in vaccinated cases* :—Gujral and his co-workers noted that out of 550 cases, 20 cases, *i. e.*, (3·6%) had paralytic poliomyelitis inspite of receiving the vaccine. 10 cases had received all the three doses, 6 had 2 doses and 4 had only 1 dose. 2 cases had received one booster dose also. They also noted that in 27·6% of paralytic cases there was a history of injection during acute febrile stage of disease. The paralysis started and was maximum in the muscle group which shared the same segmental innervation as the traumatised area. It is wise, therefore, to avoid any intramuscular injection in acute unexplained fevers, especially during the months of increased incidence of poliomyelitis.

2. *Incidence of double attack of poliomyelitis* :—During the period 1971 to 1975, 6 cases were observed to have suffered from 2 attacks of poliomyelitis at an interval verying from 6 to 12 months by Gujral, *et al*.

Prevention of poliomyelitis.—*Role of vaccination* :–With the discovery of Salk and Sabin vaccines, the prevention of poliomyelitis has become a practical possibility.

Salk vaccine :—This was invented by Dr. Jonas Salk in 1953. It is a killed vaccine containing all 3 types of poliovirus. The virus is inactivated by formalin. The vaccine is given by injection in a 3 or 4 dose schedule intra-muscularly or subcutaneously. The first two doses are given at an interval of 4 to 6 weeks and the third dose after an interval of 6 months. This long interval is required to ensure a satisfactory antibody response. A further dose, 6 to 9 months after the 3rd is estimated to enhance the protection further.

Salk vaccine stimulates the production of circulating antibodies which protect the individual against paralytic polio, but does not prevent reinfection of the alimentary tract by the wild viruses. Therfore the spread of wild polio virus continues in the community. This is a major drawback of the Salk vaccine.

Sabin vaccine :—Sabin vaccine is a live oral polio vaccine prepared from attenuated strains of the 3 antigenic types of polio virus. It is the vaccine of choice for immunising against polio and most countries now use oral polio vaccine. Ideally, each virus type should be given separately as monovalent vaccine, but for administrative convenience, rather than efficiency, it is given usually as a trivalent vaccine (Beale, A. J.).

The schedule of vaccination generally recommended is 3 doses of trivalent vaccine (each dose 0·2 or 0·5 ml. depending upon strength) for primary immunisation—the first dose to be given around 3 months of age and the subsequent two doses at interval of 4 to 6 weeks.

Since, oral polio-vaccine has been found to be less satisfactory in India (as in other tropical countries), an initial course of 5 monthly doses has been recommended by John (Ind. ped. 9, 1972). This is similar to the view expressed by Pangi *et al* (1977). Gujral and his colleagues, on the other hand expressed the view that the vaccines should be given in 2nd, 3rd and 4th month and booster doses every year upto 5 years.

Poor sero—conversion or effective response did not occur in spite of giving potent vaccine in tropical countries as stated by

Cockburn (1961) and others. The factors responsible for the poor sero response seen in the developing countries may be many and varied namely climatic, environmental, socio economic, nutritional status, or the presence of high incidence of various infectious diseases and infestation. Pangi *et al* found that sero-conversion was poor in those children who excreted a large number of enterovirus in the fæces during the time of administration of the vaccine. The role of enterovirus infection at the time of vaccination in hampering with a good antibody response is further highlighted by the fact that immunisation done in winter months (especially November to January) was found to give a better antibody response. This may be due to the fact that entero-virus excretion during these months is less. It is for this reason that Pangi *et al* advocated mass vaccination in winter months. Though not proven, the inferior immunity may be due to antibodies and other agents in the breast milk, and ideally other fluids only should be given during 3 hours before and after oral polio vaccine. The interplay of birth weight, nutritional status, age, sex, and other unknown factors upon the antibody response of a person is at present largely uncertain. However, it is agreed universally that live attenuated virus vaccine enjoys many of the advantages. The simplicity of its administration has meant that large areas can be immunised in a carefully organised programme. In the face of the rising incidence of the disease this could permit the application of the vaccine very rapidly—preferably using a monotypic vaccine of a type not causing the epidemic. It may be that in such conditions "interference phenomenon" comes into play—the bowel cells become infected with the tamed strain and prevent the "wild" virus from successively colonising them.

Following heavy mass immunisation campaigns in many countries cases of paralytic poliomyelitis have virtually ceased to occur. However it is clear that the infection may continue to smoulder in the community. If the immunity status of the population is not maintained by proper administration of vaccine to infants born since the last mass immunisation campaigns and to arrivals from elsewhere, outbreak of paralytic cases may still be anticipated.

Contraindication to oral poliovaccine are only few in number (*viz*) the presence of fever or other symptoms of disease, diarrhœa, entric disease, aggravation of tuberculosis, cardiovascular disease in decompensated stage are some of the well known contraindications.

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REVIEWS OF BOOKS

"Psychology in Relation to Medicine"—(Fifth Edition) By Dr. R. M. MOWBRAY, Dr. T. FERGUSON RODGER and Dr. C. S. MELLOR, Pp. 272; Published by: M/s. B. I. Publications, Promotion Department, 359, Dr. D. N. Road, Bombay-400 023.

[Price : £ 5·00/-

This book has been written with a view to build an integration between psychiatry and psychology in medicine. This should be so because, psychology bears a similar relationship to psychiatry as physiology does to general medicine.

This book consists of five sections. The first section gives an introduction to psychology as a discipline that deals with the human mind. The second section explains about the psychological process such as instincts, emotions, sleep, dreams etc. Section three deals with the higher mental processes such as thinking, learning, remembering and perceiving. Here the perceiving activity has been explained with its clinical implications like perception of pain hallucinations etc. The next section is the one on intelligence. Here the measuring of the intelligence with the help of intelligence tests including the uses and limitations of intelligence tests have been dealt with. The final chapter has been written on the "personality" which denotes the face we present to others-the impressions we make on other people. Here first the development of different stages (from infancy to old age) of personality has been narrated. Then the assessment of personality and finally, psychiatry has been dealt with in a brief way.

The book has been written in a simple and easily understandable way style. There are some interesting psychological puzzles also. This book will serve the personnel of the concerned disciplines. Besides it will be useful to all medicos and physicians as every doctor has to deal with his patients' emotional problems when they come with physical illness.

R. RAVINATHAN, M.B.,B.S.,

"Pain—Its Nature, Analysis and Treatment"—By MICHAEL R. BOND, M.D., Ph.D, M. R. C. P., F. R. C S., (Edin), M. R. C. P., Pp. 200; Published by: M/s. B. I. Publications, Promotion Department, 359, Dr D. N. Road, Bombay—400 023.

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One of the important medical problems facing modern man is the complaint of pain be it physical or mental in origin.

Pain may be acute in which case it serves the useful purpose of warning the individual of something wrong and prompts him to seek medical advice, or it may be chronic when it constitutes a major national and world health and economic problem. In spite of numerous and spectacular advances in medical science, the total conquest of pain from any reason still remains incomplete. There is not only a sense of frustration at our inability to control pain, but also a sense of helplessness at our inability to understand the basic pain mechanism. This book contains a comprehensive review of the current knowledge about neuro-physiologic, psychologic and biochemical causes of pain and the therapeutic advances in controlling pain.

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"Psychiatry"—(Fourth Edition) By Dr. W. H. TREATHOWAN, O.B.E., M.A., M.B., F.R.C.P., F.R.A.C P., F.R.A.N.Z.C.P. (HON.) Pp. 488; Published by: M/s. B.I. Publications, Promotion Department, 359, Dr. D. N. Road, Bombay-400 023. [Price: £ 1.50/-

Psychiatry is the branch of medicine which deals with the study, diagnosis, care, prevention and treatment of illnesses of abnormal mental or emotional status. This book is a complete work on psychiatry in the sense that it narrates all the criteria mentioned above. Beginners will find this book very useful as the subject has been written in a simple and clear manner.

In the earlier sections the classification of mental disorders has been given. Then the various mental disorders have been discussed under the following heads: organic disorders, affective disorders, schizophrenic, paranoid status, abnormal emotional reactions, anxiety states, hysteria, obsessive compulsive disorders, personality disorders and disturbances of sexual behavior have been explained in the orthodox way, *i.e.*, psychopathology, clinical features, management and prognosis of each mental disorders have been discussed.

Two more important topics that have been included in the book are alcoholism and drug dependence and a complete account of epilepsy. The chapter titled "Psychiatry" and medicine will be useful to general practitioners to tackle the man ailing with his emotional imbalance. The pages under the heading "Child psychiatry" which includes the psychiatric examination of the children, will be helpful to pediatricians. Social aspects of mental illness' will be helpful in the practice of community health, in establishing child guidance and training the social workers and co-ordinators of the health teams. Finally, medicolegal aspects of psychiatry has been discussed in the last chapter, titled 'mental illness and the law'.

This book wlll be useful to students of psychiatry, in addition to being helpful to nurses and social workers of the concerned field.

AMUDHA MOZHI, M.B., B.S.

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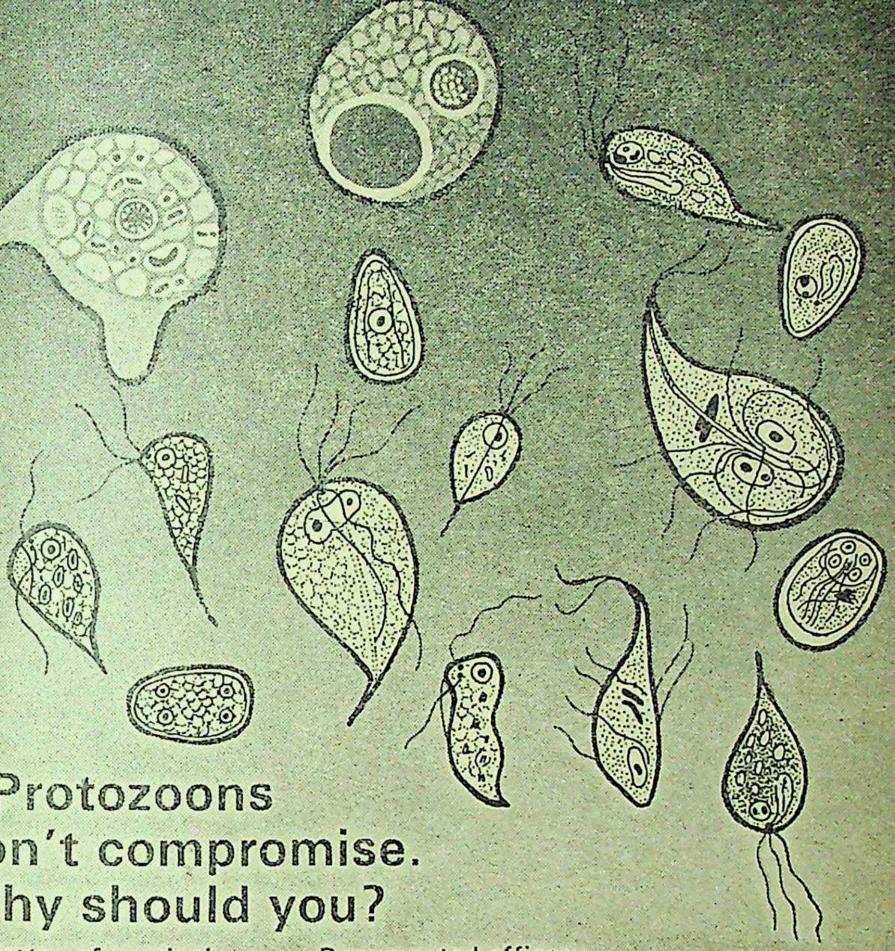

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Editorial

BETTERING THE LOT OF THE NURSES IN GOVERNMENT HOSPITALS

It has been recently reported that the consensus of opinion expressed at the Ninth biennial Conference of the Tamil Nadu branch of the Trained Nurses' Association of India, during the inauguration of the South Zone Unit of the same Association in the City of Madras was, that praises and appreciative tributes by doctors and others will not go to mitigate their hard and difficult service conditions.

It is claimed that, while the Indian Nursing Council has recommended employment of nurses in the ratio of one nurse to three patients in hospitals attached to teaching institutions, and 1 : 5, in hospitals without any teaching institutions, it is being sanctioned in the ratio of 1 : 8 in Tamil Nadu. Another grievance is, that while fixing the cadre strength of nurses the bed strength only in each hospital is being taken into account without reckoning the number of patients who are occupying the floors, and that the actual ratio may be anything between 1 : 3 to 1 : 20. This latter contention does not appear sustainable in as much as all such floor patients constitute a varying floating population not entitled either to full-time attention or other concessions as for a regular inpatient. They are there more out of sympathy.

It is well known that the nurse's duties in a hospital require almost continuous, strenuous, round-the-clock attention involving considerable physical strain, alertness and resourcefulness. Furthermore, their work calls for utmost patience in dealing with various types of patients, bed-side manners, a soft tongue and above-the-average quality of adjustability, all admirably suited, more to young women than males. As their work is arduous, requiring them to be on their heels for most of the time, and as many of them have to take to it forgetting their rightful place at the hearth or with their children and husbands, they have *ipsofacto*, a legitimate claim for a better deal linked to the cost of living. Their ration, washing or dhoby allowances have necessarily to be revised from time to time on the basis of market conditions. It is indeed gratifying to be told by the Joint Secretary to the Tamil Nadu Department of Health and

Family Welfare, Mr. N. Vaithialingam, that after all, Government have realised the necessity to define the duties of a nurse and have accordingly issued orders. The nurses may not hereafter be called upon to undertake extra duties as has been in the past.

It is reported that Government have now increased the number of admissions of nurse trainees in the training schools from 300 last year, to 420 this year. This does not in any way touch the fringe of the problem as correctly and justifiably raised by the Nurses Association, which refers to the teaching of the various sophisticated advances in medicine, treatment and specialisation in different branches. This is a very legitimate demand and has to be readily conceded. It is not known whether this incidentally, would call for a revision of the syllabus of studies for the training of nurses. Increasing the existing admission strength of trainees in the training schools will only contribute towards diluting the teacher : taught ratio and detract considerably from the depth and intensity of the instructions imparted to them. The remedy lies in the opening of more training schools for nurses in all towns where there are medical colleges.

While delivering the key-note address of the Association, the Director of Medical Education Dr. S. Gnanadesikan, was pleased to say that he would consider making the ten plus two the minimum qualification for admission to B. Sc. (nursing) courses. As this is a solitary degree course in nursing available with the University of Madras, more and more women should be encouraged to take up this course. The nurses on their part will have to co-operate by bestowing on their patients more kindness and care. These essential features seem to be occasionally lacking in the members of this noble profession, this lapse however being more an exception rather than the rule.

A COMPARATIVE STUDY OF INDOMETHACIN AND IBUPROFEN IN THE TREATMENT OR RHEUMATOID ARTHRITIS

In a double blind trial with 20 patients Ibuprofen 200 mg., total daily dose 1600 mg., and indomethacin 12.5 mg. total daily dose 100 mg. were shown to be of comparable efficacy in the short-term treatment of rheumatoid arthritis. More patients showed improvement in morning stiffness and walking speed while taking indomethacin than while taking ibuprofen. Reported side effects were similar, but a slightly greater incidence of gastric irritation was noted with indomethacin necessitating withdrawal of one patient from the trial. Serum concentrations for the drugs were determined for four hours after the last dose. Peak concentrations of both drugs occurred within 2 hours.

Five of the seven patients considered to have comparable serum concentrations of both drugs demonstrated a preference for indomethacin.—(*The Medical Journal of Australia*, 13-1-1979).

New Preparations:

PROSTAGLANDINS :

DOORWAY TO A NEW THERAPEUTIC ERA

PROSTAGLANDINS, a remarkable family of hormone-like substances, have emerged only recently from the ranks of laboratory curiosities into the spotlight of intense worldwide interest. An almost limitless vista of therapeutics seems to be opened by these compounds.

Various prostaglandins (PGs) can raise *or* lower blood pressure, induce abortion, regulate fertility, cause or relieve inflammation, open asthmatic airways, stimulate or prevent blood clotting, treat gastric ulcers, induce fever, cause migraine headaches, affect nerve impulse transmission, inhibit fat metabolism and offer life-saving temporary therapy for certain kinds of "blue babies" awaiting surgery.

Two of these subtle but powerful substances are being used in medicine now. They are harbingers of a richer therapeutic harvest to come. Prostin F2 alpha and Prostin E2, both marketed by The Upjohn Company, have been approved in a number of nations throughout the world for inducing labor at term, for expelling the uterine contents in cases of benign hydatidiform mole and death in utero and/or for therapeutic abortion.

The Upjohn Company, a Worldwide developer and distributor of pharmaceuticals, has supported prostaglandin research since the early studies on the chemical structures of the substances in the 1950s. In 1965, they became the first pharmaceutical firm to produce prostaglandins on a large scale. Upjohn continues to supply the research needs of their own and the World's scientists by granting gifts of the precious substances to researchers who want to study them.

Physicians are looking to PG-related compounds to help in the battle against cardiovascular disease, which primarily through heart disease, high blood pressure and stroke, claims the lives of more than a million Americans annually. Prostacyclin, for example, is a natural substance thought to protect healthy blood vessels from developing blood clots and scars.

Prostacyclin is thought to work in complement with another class of PG-related compounds, the thromboxanes, which are powerful stimulants for the blood-clotting process. Current thinking among many scientists concerned with atherosclerosis is that when the disease develops, an imbalance exists between the clot-promoting and clot-inhibiting factors among the body's PGs.

Moreover, scientists have found that many PGs exert a profound effect on kidney function, causing a reduction in blood pressure and a rise in urinary output. In addition, certain PGs cause blood vessels to relax, resulting in a further blood pressure drop in individuals who have hypertension. While still largely mysterious, these PGs are felt by many medical researchers to hold the key to essential hypertension, a dangerous illness with no known cause and no known cure.

According to researchers, certain other disease states seem relieved by drugs that inhibit PG formation. For example aspirin, a PG inhibitor, may relieve the pain of arthritis by thwarting the production of a PG that is believed to irritate joint linings. It may also relieve excessive menstrual pain and bleeding, conditions associated with overproduction of PGs in the body.

PGs are so potent that only a billionth of a gram (two trillionths of a pound) is enough to produce noticeable effects on human or animal tissue. Most PGs formed in the body are destroyed very rapidly so that no buildup of these potent substances occurs. Prostaglandins have been identified in minute amounts from almost every type of animal and human tissue.

Researchers at Upjohn and around the world are working to unravel the mysteries of prostaglandins, prostacycline and thromboxanes in normal body functions and in disease. And through an amalgam of chemistry, biology and medicine, they are creating close chemical relatives of the naturally occurring PGs that will have more specific therapeutic effects, fewer side effects and longer active lifetime in the body.

PREVENTION OF CORONARY HEART DISEASE STARTS IN CHILDHOOD

The participants of a symposium held at Middlesex Hospital agreed that children should be encouraged not to smoke, to be reasonably physically active, and to eat in moderation. A case was made for recommending that the population as a whole reduce caloric intake moderately, reduce the amount of saturated fat in the diet and substitute poly unsaturated fats in the diet. Such measures taken in childhood are likely to be most effective in reducing the incidence of coronary heart disease later, though careful research by pediatricians will be necessary to document this. Pediatricians have a role in identifying children at special risk from premature atherosclerosis due to hypertension, smoking and hyperlipidemia, all of which they should be actively seeking especially in the presence of a family history of coronary heart disease or hypertension.—(*New York State Journal of Medicine*, Nov. 1978).

GLEANINGS

MEDICINE AND THERAPEUTICS

Prinzmetal's Angina.—(*J.A.M.A.*, 18th August, 1978).

Prinzmetal and his colleagues described a variant form of angina characterised by cyclic attacks of chest pain occurring at rest and associated with transient S-T. segment elevation. He postulated that these attacks were due to spasm of a major coronary artery. The ergonovine test appears to be a sensitive and safe test for provoking attacks of Prinzmetal's angina but should be performed under carefully controlled conditions. Nitrate vasodilators such as nitroglycerin 2% topical nitroglycerin, erythrityl and isosorbide dinitrate, alone, or in combination are useful. Propranolol may be useful but it has been reported that in some cases it increased symptoms of myocardial ischemia. Phenoxybenzamine hydrochloride, an α-blocking agent, has been reported to be useful in a few and could be used in patients refractory to nitrates. Premature ventricular contractions or ventricular tachycardia often accompanies attacks of this kind of angina and may necessitate treatment with quinidine sulfate, procainamide hydrochloride, or disopyramide phosphate. Surgery for Prinzmetal's angina is associated with a high early post-operative mortality (12·5%), high rate of post-operative myocardial infarction (24%), and frequent continued chest pain (28%). Standard medical treatment consists of nitroglycerin and long acting nitrates and is often unsuccessful. Coronary revascularisation results are discouraging, showing less benefit than in patients with exertional angina. Preliminary results using perhexilire to treat a small number of patients who failed to respond to nitrates and propranolol suggest that this drug may be an effective new agent to manage this order.

Standard test for diabetes is declared inadequate.—(*New York State Journal of Medicine*, Nov. 1978).

The time honoured blood sugar test for diabetes may be inadequate say two Wisconsin researchers. A high blood sugar count does not necessarily mean that the patient has diabetes. Rather, measurement of the body's insulin reserve is the true test say Drs. Turkington and Weindling. Many of those who flunk the blood sugar test are not deficient in insulin production at all. Their bodies are simply resistant to utilising insulin properly. This can happen for a number of reasons but most often due to obesity. This explains the phenomenon of the over weight, who was "cured" of diabetes by simply reducing to normal size. This person never had diabetes despite a high blood sugar count and was merely insulin resistant. Those who are insulin resistant probably do not need constant medical treatment at all says the report. Doctors Turkington and Weindling discredit the standard abnormal glucose-tolerence test primarily because in their series of 334 diabetic patients observed for 18 years the test failed to predict late complications of diabetes. These serious complications occurred only in patients deficient in insulin. The Wisconsin physicians actually redefine diabetes. They limit the term to a syndrome characterised by insulin deficiency. "Diagnosis on the basis of inducted insulin secretion provides a more logical therapeutic rationale for their management insulin supplementation for diabetes mellitus, and reduction of the resistance factor (Obesity and others) in the syndrome of insulin resistance" Wisconsin doctors declare that insulin assays are inexpensive. and appear to provide the most reliable criteria for diagnosis and prognosis in diabetes mellitus".

Risk factor of elevated serum cholesterol levels in elderly persons.—(*J. A M. A.*, 27-10-1978).

Q. An otherwise healthy 76-year-old man has a cholesterol level between 300 to 350 mg/dl. Should an attempt be made to lower it with a drug such as clofibrate (Atromid-S) or dextrothyroxine sodium (Choloxin)? He is unable to tolerate niacin. The patient takes warfarin sodium (Coumadin). 5mg/day, for control of recurrent thrombophlebitis. His prothrombin time is in the 20 to 25 s. range and I would like to keep it at that level. Any drug that he takes to lower his serum cholesterol level would have to be compatible with the warfarin therapy. In your consultant's opinion should the warfarin dosage be changed?

A. It is doubtful whether there is any virtue in attempting to modify the serum cholesterol level of a 76-year-old man. All the statistics on which the risk factor hypothesis is based relate to men younger, than 65 years old. All of the conclusions of the Framingham study become much less well founded with advancing age. In fact, such statistics as have been gathered suggest that there is no correlation between the serum cholesterol level and life expectancy in the late 60s and 70s. Since there is still no conclusive evidence that lowering the serum cholesterol level at younger ages might, in fact, reduce the risk of coronary heart disease, we can say nothing about the man older than 75 years. If your patient requires warfarin for control of recurrent thrombophlebitis, there is good reason to think he is already obtaining some prophylaxis against the possibility of coronary thrombosis and myocardial infarction. Some cholesterol reduction could be achieved by the administration of a bile sequestrant such as cholestyramine resin, but the warfarin dosage will have to be increased in that case, because the drug absorption would then be lessened. If there is an elevated triglyceride level with the elevated serum cholesterol level, then clofibrate or niacin might have some effect. Clofibrate would be better tolerated than niacin, although neither of these drugs changed the course of coronary disease in men who had sustained previous myocardial infarction when these two drugs were compared in the coronary drug project. Thus, cholestyramine should probably be the drug of choice, if, in fact, serum cholesterol level reduction is deemed necessary.

RADIOLOGY

Problems in the diagnosis of cancer of the colon by barium enema.—(*West Virginia Medical Journal*, Vol. 75, No. 4, April, 1979).

The importance of barium examination in the diagnosis of cancer of the colon and the need for adequate preparation, high quality films and good technique is emphasised. The air contrast method should be used in any case of suspected colenic cancer, and is particularly useful for discovering small polypoid lesions. In patients with predisposing conditions, such as ulcerative colitis or a previous history of bowel cancer, a high index of suspicion for malignancy is mandatory. A baseline barium enema at six to eight weeks post resection of a colonic neoplasm should be obtained because of the risk of development of recurrent tumors. Miller states five requirements for an adequate air contrast study as (1) a clean colon, (2) suitable barium suspension, (3) adequate insufflation (4) drainage of excess barium and (5) adequate films. Flexures and loops of sigmoid must be opened and the rectal tip should not be inserted so far that it may obscure a lesion. Lesions are easily missed in the cecum because of its large size, and the presence of faeces. In the sigmoid, lateral and angle views should be taken to see areas of the bowel hidden by overlying loops. A careful complete study must be performed if a polyp is observed, because of the possibilities of multiple polyps or synchronous tumours. The management of colonic polyps depends upon the search for radiographic signs of malignancy. Ulcerative colitis, Gardners syndrome, familial polyposis chronic draining sinuses, uretero sigmoidostomy, pelvic irradiation, and a history of bowel cancer predispose the colon to develop malignancy. The rate of recurrence in anastamoses in the distal colon is 11·3% against 5·5% in the ascending or proximal colonic anastamosis, and is rare in the ileocolic anastamosis. The signs and symptoms include perineal discomfort, dull aching pain, abdominal mass, weight loss, constipation, and rectal bleeding.

CORRESPONDENCE

To the Editor, 'ANTISEPTIC', Madras.

Query

Sir,

Re : Anti D (Rho) Immunoglobulin.

1. What is the dose of the injection to be given to different persons as 100 mcg ; 250 mcg ; 400 mcg are available for use ?

2. What is the exact timing of giving the injection; some say to be given after 24 hours but within 72 hours and some say immediately but within 72 hours—which is to be followed ? What is wrong if it is given after 72 hours.?

3. Another doubt is that if the patient had received Rh+blood transfusions, the above injection should not be given if it is within a three months period. This means that after 3 months it can be given. By that time the antibodies might have already formed. So, in that case what is its action?

4. Is the immunity life long ? Is it necessary to give a second dose ? If so, how often can it be given ?

Thuruthipuram, P O.
Kottapuram-680 667

P. T. GEORGE,
B.SC., M.B., B.S.,

Answer

1. Anti-D immunoglobulin is administered to Rh negative mothers within 72 hours after delivery of an Rh positive child to prevent maternal sensitization. The dosage suggested, (*i*) after full term delivery is 300—400 mcg., (*ii*) after a miscarriage below 12 weeks is 100 mcg. and (*iii*) after a miscarriage between 12—20 weeks is 250 mcg.

2. Where a Rh (—) mother delivers a Rh+baby, there are chances that Rh + cells will enter into the maternal circulation and provoke an autonomous immune response. This usually happens after 60—72 hours of delivery only. Hence, the ideal timing of giving the injection will be within 72 hours after delivery ; preferably within 60 hours. If it is given after 72 hours, *i.e.*, after the immune response has been provoked, there is no use of administering the immunoglobulin.

3. Definitely there will be antibody formation after Rh+blood transfusion. But, the antibody titre after 3 months may not be sufficient to harm a fetus of a subsequent pregnancy. But, if there is any chance for the provocation of auto immune response again, then there is chance for the titre to increase to a level that it may harm the subsequent pregnancy, hence the need for the injection.

4. The immunity acquired is passive, hence it is not life long. As far as there is no chance for any fresh Rh+ cells to enter the circulation through pregnancy or miscarriage, the second dose is not necessary. Whenever there is such a chance, the injection has to be repeated.

Swallows Health Centre
Manali, Madras-600 068

AMUDHAMOZHI,
M.B., B.S.,

Query

Sir,

Kindly explain in detail the precaution to be taken before and after giving oral polio vaccine ;

Asst Medical Officer,
C 4 35), Dharangadhra
Chemical Works Ltd.,
Sahupuram Arumuganeri
P. O., Tirunelveli Dist.
Pin-628202

DR. JAYARAM SESHAN,
M.B., B.S.,

Answer

The following precautions must be kept in mind while administrating oral polio drops lh children. 1. The child must be free from infections.

2. If the child is breast fed, breast feeding may be withheld preferably 3 hours before and after oral polio vaccine administration, although the interference by antibioties from breast milk is considered minimal.

3. Artificial feeds may be given during this period of 6 hours.

4. No hot drinks should be given ½ hour before and after administration of OPV.

5. Small pox vaccine or other viral vaccines should not be given during the period when oral polio vaccine is being administered. At least a minimum of 30 days must pass before considering other viral vaccines.

6. It is preferable to administer the vaccine in a cool environment.

B. R. SANTHANAKRISHNAN, A.B., (ped.)

Query

Sir,

Kindly enlighten me the value of the following treatment through your esteemed columns of correspondence in your 'Antiseptic' Journal.

The value of small-pox vaccination repeatedly in a case of "Herpes Progenitalis". In this case, please let me know the basis on which this vaccination is used and how many times the vaccination is to be given in a case.

557, 9th Main Magadi Chord Road Vijayanagar, Bangalore.40 } D. L. GANAPATHY, B.Sc., M.B., B.S.,

Answer

Ref :—Treatment of Herpes Progenitalis—letter received on 26-9-1979.

Small-pox vaccination treatment has now been superseded by the use of iodoxyuridine solution applied locally. This is available in the market as "Redinox" eye solution. The same may be used for Herpes Progenitalis for each attack.

If small-pox vaccination is used then one gives two small pox vaccinations every week for about four weeks—a total of eight. This treatment as mentioned earlier is now being replaced by topical use of iodoxy-uridine (Redinox).

938, Poonamallee High Road, Flowers Road, P.O, Madras-600 084 } Dr. A. S. THAMBIAH, F.R.C.P., D.V., F.A.M.S.,

To the Editor, 'ANTISEPTIC', Madras.

Sir,

Re :—Article entitled "BCG vaccination" Oct. '79 issue of the 'Antiseptic.'

It has been mentioned in the article on BCG vaccination (Oct. 1979) that there was a controversy on the benefits of BCG some 25 years back which was resolved subsequently.

Again now, there as arisen a raging controversy on the efficacy of BCG in preventing TB consequent to the reported unfavourable findings of the Chingleput study of the ICMR. The significance of the findings of the study has been largely misunderstood, even by many of the doctors. The Chingleput locality appears to be one of the few epidemiologically different pockets in the country. The unfavourable findings of the Chingleput study do not nullify the favourable conclusions obtained through previous extensive studies all over the world.

Without conducting similar studies at various places in the country it cannot be concluded that BCG vaccination does not confer immunity in Indian subjects. Until such time, it would be a disservice if any doctor pronounces to the public that BCG vaccination is "useless" or "harmful".

Perundurai Sanatorium, P.O, Periyar Dist. Tamil Nadu-638 053 } Dr. T. RAMA PRASAD, M.B., B.S., D.T.C.D., F.I.C.A. (U.S.A.),

Query

Sir,

I shall be highly thankful if you could please enlighten me on :

1. Treatment of earth eating habits of a child ?

2. Treatment of salivation of Infants (Glossitis or stomatitis).

Anbawadi, Keshod } M. G. KANSAGRA, M.B., B.S.,

Answer

1. Perverted appetite occurs most often in the first 3 years of life. A child may ingest any of a large variety of unsuitable substances including earth, wall scrapings or paint from furniture. Such an abnormal behaviour is called 'pica'. Since this symptom can be associated with nutritional deficiencies, such as iron and other nutrients, and with parasitic infestations they must be ruled out. but they are not etiological factors as far as is known. This activity may also be seen in neurotic and mentally defective children. Emotionally deprived children may also put into their mouths and eat all kinds of objects in their environment. Hence adequate attention must be paid to study the underlying reasons for these symptoms. Provision for the child to have adequate sucking, biting, chewing and other mouth, lip and tongue pleasures during the oral stage may eliminate the need for abnormal continuation of these activities. Treatment should include remedy of any nutritional deficiency, parasitic infestation, the evaluation of child's mental and emotional capacities, and attention to the quantity and quality of stimulation for the child.

2. Excessive secretion of saliva occurs during teething, as a reflex to anticipated feeding or pain, from irritative lesions in the mouth, in conjunction with nausea and certain CNS affections like encephalitis.

In some mentally retarded children also, there may be excessive salivary discharge or drooling.

Aphthous ulcers are commonly painful lesions found in the oral mucosa including tongue and palate. It has been suggested that an L. form of streptococcus may be the pathogen responsible. The ulcer usually heals in one to two weeks time. Oral antibiotics like penicillin or erythromycin may be tried in such cases. Local application of cortisone acetate solution (1·5%) may be beneficial.

B. R. SANTHANAKRISHNAN, M.D., (Ped.)

Query

Sir,

Can milk of an animal bitten by a rabid dog be consumed? If not for how long.

(2) A child was brought to me (ten months old) with polio attack. Unfortunately he had been given only 2 doses of oral polio vaccine. After 3 months of the second dose, he developed the attack.

(a) Is there something wrong with the vaccine?

(b) Has it occurred due to insufficient dosage?

Civil Dispensary,
Santokgarh, Una (H.P.)

O. P. DUTTA,
B.SC., M.B.,B.S.,

Answer

Sir,

1. Milk from an animal bitten by a rabid dog, if boiled well, can be consumed without any need for anti-rabies immunisation. Rabies virus is killed by heat. If the prevalent practice at the reader's place is consuming unboiled milk, all individuals who have consumed such milk from an animal exposed to rabies, should be given. BPL-inactivated nerve tissue vaccine 2 ml. for adults and 1ml. for children daily for 7 days in succession as subcutaneous injections in the anterior abdominal wall. This precaution is needed in view of the possibility of the virus getting excreted in the milk. However this is rare.

2. The trivalent oral polio vaccine rapidly deteriorates at room temperatures and has to be kept under constant refrigeration between 2 to 8 degrees Centigrade and a particular sample once opened should be used up within a few days. Three doses of trivalent vaccine are to be given orally at monthly intervals, ideally between 3 to 5 month of age with booster doses at 1½ and 5 years. Two doses of vaccine for a primary immunisation would be insufficient. Further, interference with immune response generated by polio vaccine has been known to occur due to.

(*i*) The presence of other entroviruses in the gut at the time of vaccine administration.

(*ii*) The administration of vaccine immediately after a breast feed where-by maternal antibodies present in breast milk could interfere with the vaccine.

(*iii*) The presence of an inhibitor substance in the saliva of the immunised child preventing a good antibody response.

(*iv*) The presence of an immune deficiency state like hypogammaglobulinemia.

An efficient immune response may be attained by the correct usage of a properly stored vaccine at a time when the child does not suffer from any chest or gastrointestinal infection and by the administration of the oral vaccine two hours prior to or two hours after breast feeds. Also whenever need arises for tonsillectomies during polio epidemics, it would be prudent to defer the surgery until the epidemic is over and carry it out after proper immunisation since the tonsils are immunogically important stuctures and their removal at the time of a polio epidemic might precipitate paralysis in a susceptible child.

"Gouri Shankar"
3, Srinagar Colony
Madras-600 015

K. Srinivas D.M.
(Neuro.), F.R.C.P.
(Lond.), F.R.C.P.
(Glasgow.)

NEWS AND NOTES

The Indian Society of Dermatologists and Cosmetologists felicitates Prof. A. S. Thambiah

An excellent function to honour and felicitate Prof. A. S. Thambiah on his obtaining the coveted National 'Dr. B. C. Roy Award' was arranged on 27th September, 1979 at the Taj Coramandal Hotel, Madras, by the Indian Society of Dermatologists and Cosmetologists—Tamil Nadu Branch.

The function attended by a large number of distiguished persons representing the elite of the city and Tamil Nadu, was inaugurated by His Excellency Thiru Prabhudas Patwari, Governor of Tamil Nadu and presided over by the Honourable Thiru T. Rama Prasada Rao, the Chief Justice of Tamil Nadu. Both of them paid rich tributes to the sterling qualities of the distinguished recipient—Professor Thambiah and wished him a long and useful life and further honours in the future. The Honourable minister for education, Thiru C. Aranganayagam released an attractive souvenir containing innumerable articles highlighting the career of Prof. A. S. Thambiah written by his teachers, students and colleagues. He also received a cheque presented by the society to institute Prof. A.S. Thambiah Gold Medal for the best out going student in Post-graduate Dermatological studies from the hands of Thiru P. Murali, I.A.S., Commissioner and Secretary to the Government in the Health Department.

The eminent speakers who felicitated Prof. A. S. Thambiah included the Honorable Education Minister Thiru C. Aranganayagam, Honorable Justice Thiru M.M, Ismail, Raja Sir, M.A. Muthiah Chettiar, Dr. S. Gnanadesikan —The Director of Medical Education, Dr. V. Sivarajan, Dean, Madras Medical College, Prof. R.V. Rajam, former Director of the Institute of Venereology, Dr. M. Natarajan, Dermatologist and Dr. U. Vasudeva Rau, Editor of the 'Antiseptic' Journal.

Prof. A.S. Thambiah in his reply thanked the organisers for arranging this grand function in his honour and traced the growth of dermatology in Madras.

Earlier, Dr. U. Sridhar Rao, President of the society welcomed the distinguished gathering.

CORRIGENDUM

Ref :—Article entitled—"Rational choice of antibiotics in sore throat" published in the Aug. 1979 issue of "Antiseptic". In this article, page 2, No. 448 the concentration of Bactrim Sensitivity Disc. is mentioned as 12·5μg per discs. The correct concentration of Bactrim Sensitivity Disc. is 23·75μg Sulphamethoxazole and 1·25μg Trimethoprim (25 μg).

We wish to regretfully convey to our esteemed readers that the November 1979 issue has been delayed due to frequent power failures as well as curbs on power consumption in our press.—[*Editor*]

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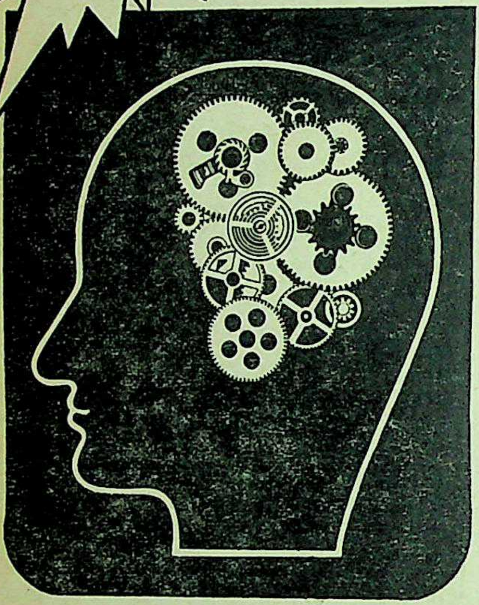

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- To accelerate the onset of action of antidepressants.
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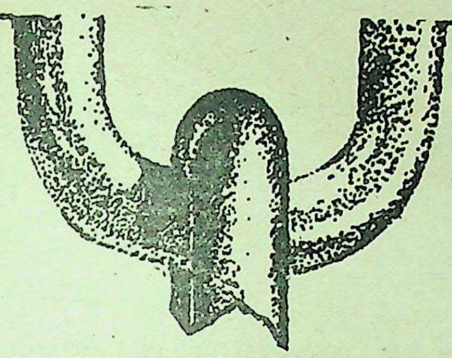

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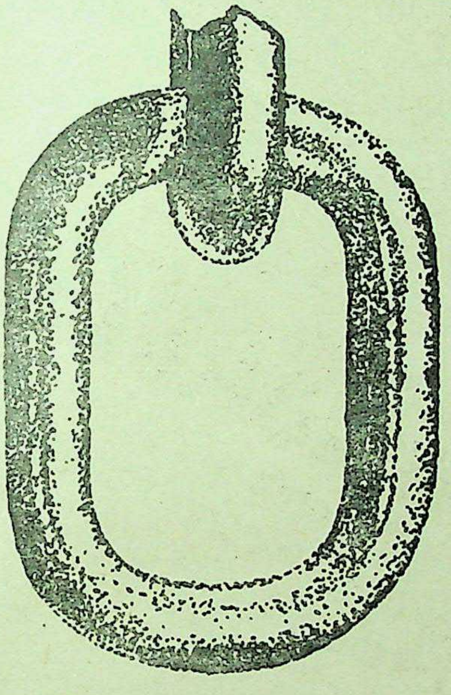

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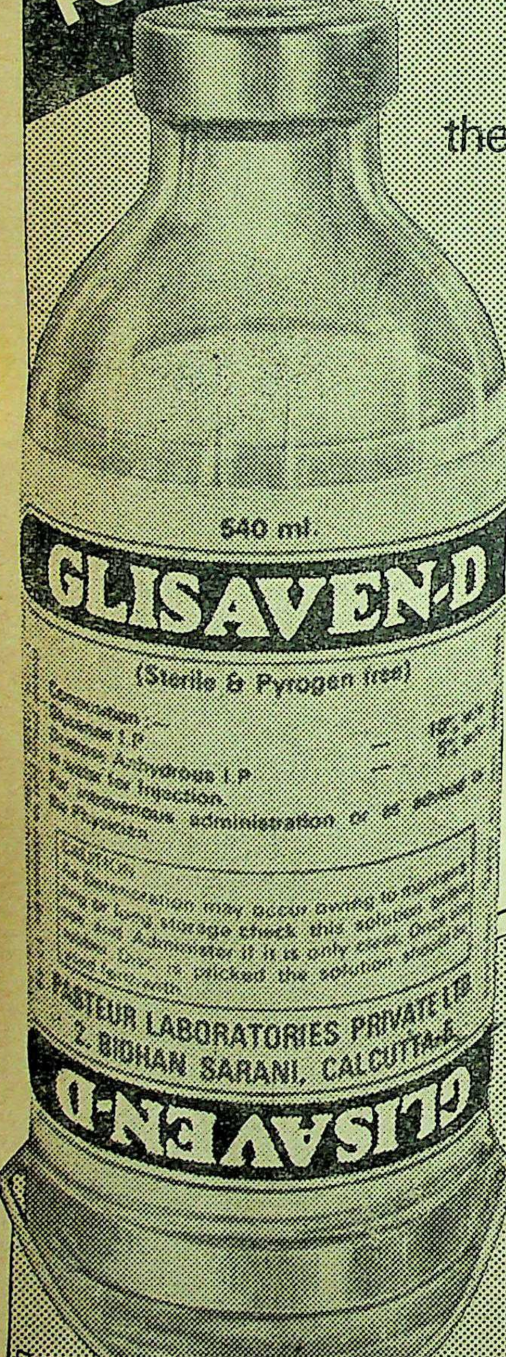
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GLISAVEN-D

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Glycerine I.P. 10%
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Presentation :-
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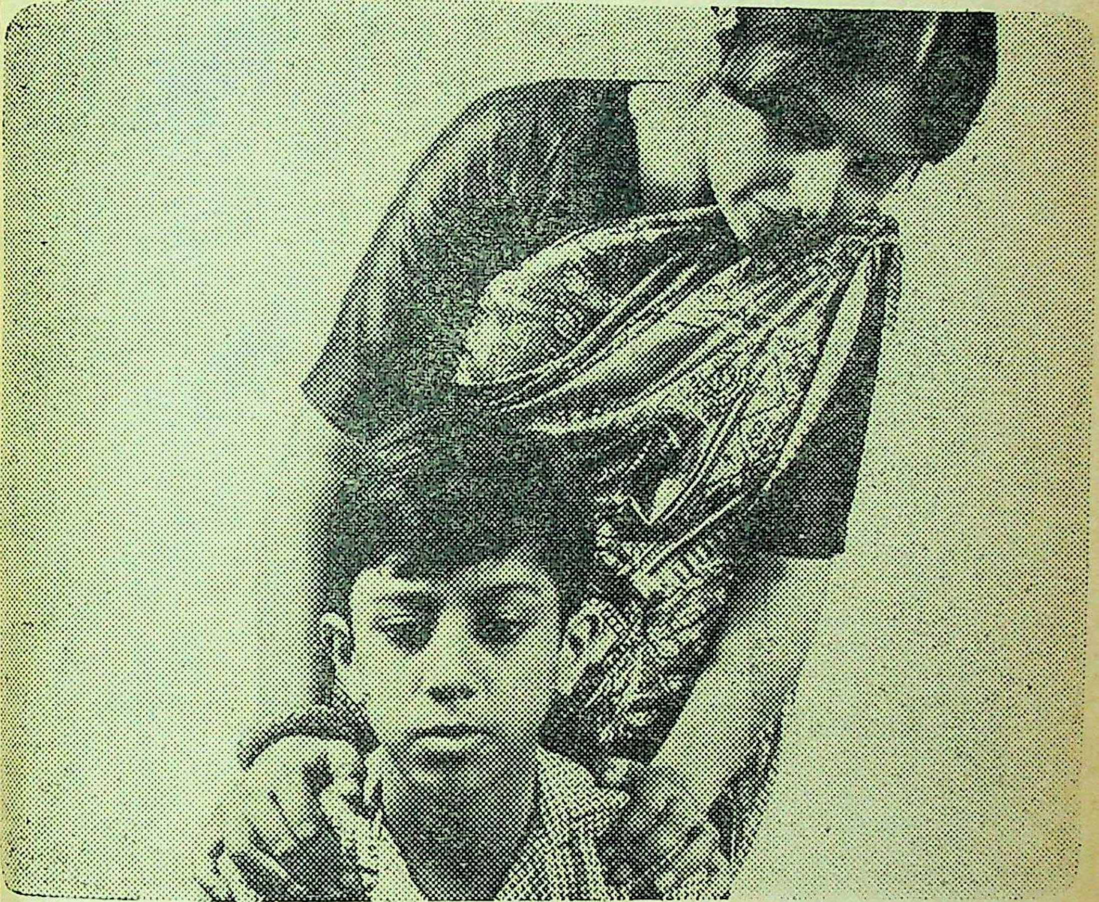

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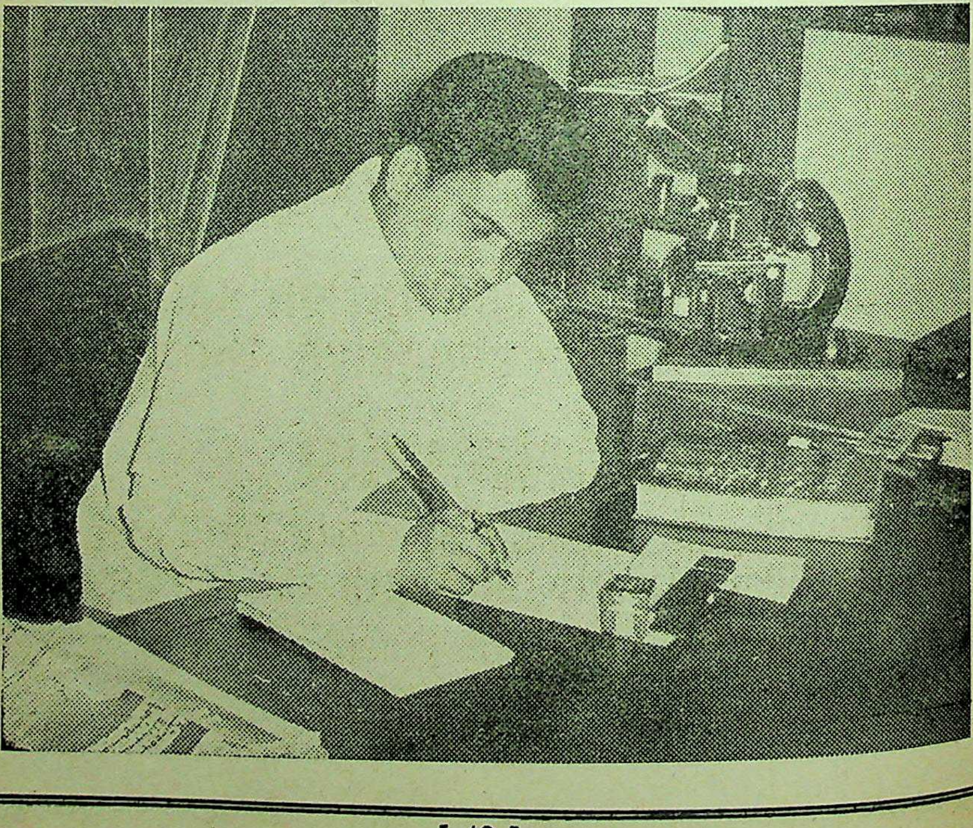

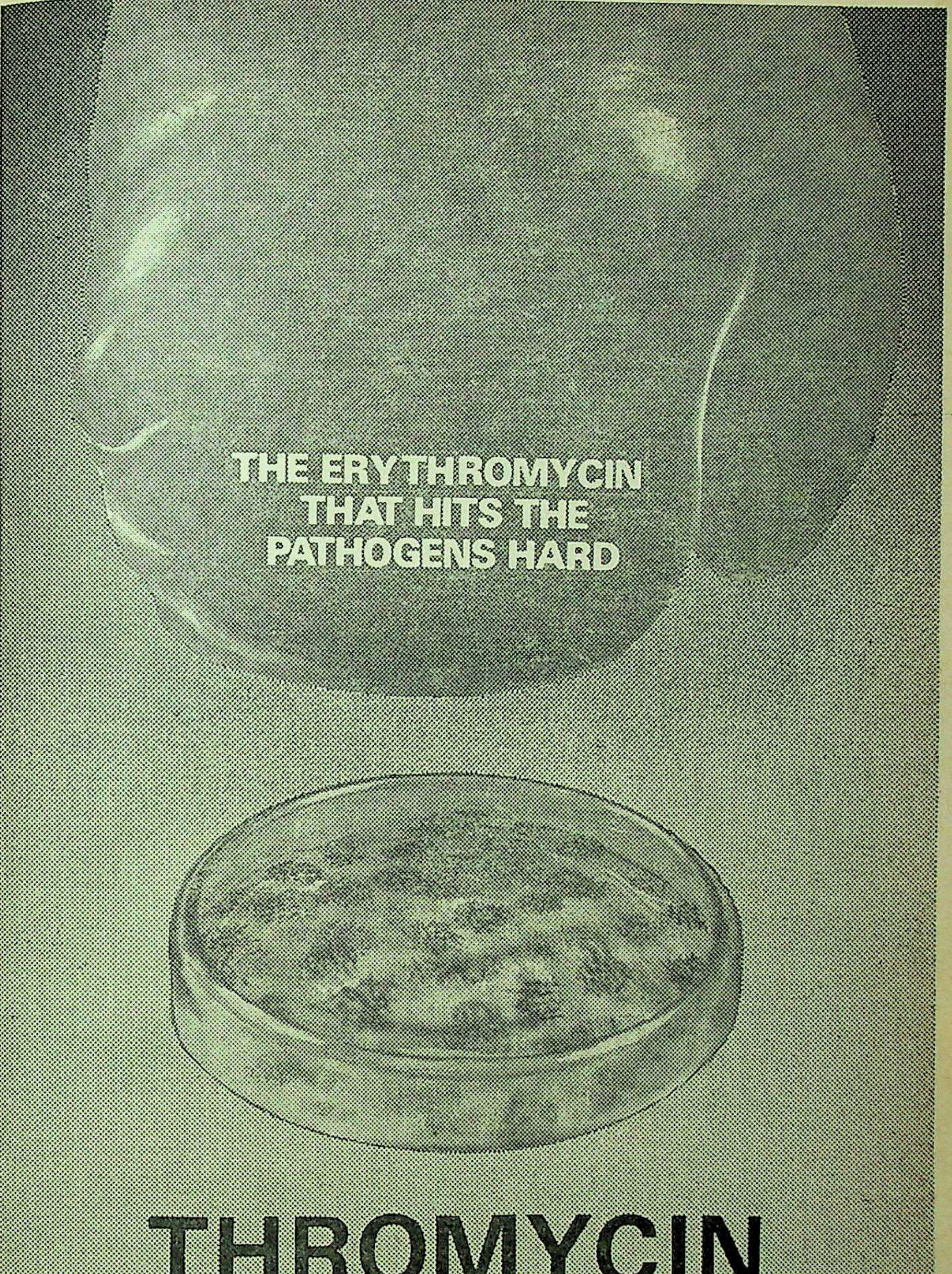
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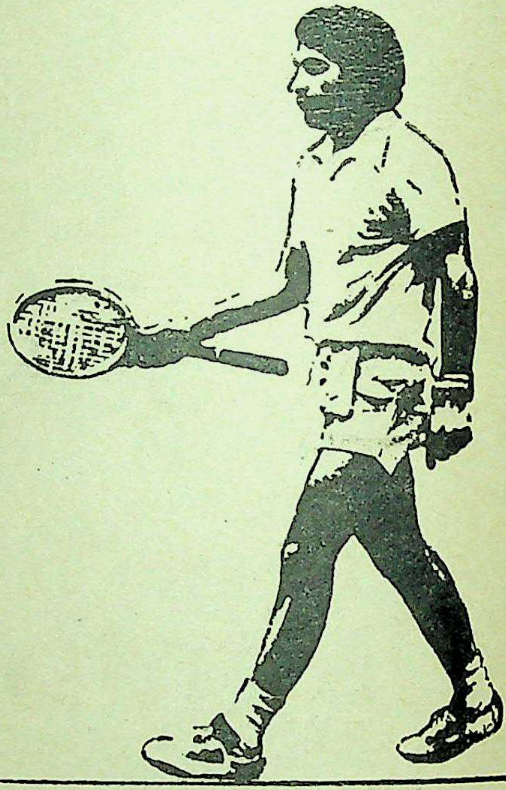

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Presentation:
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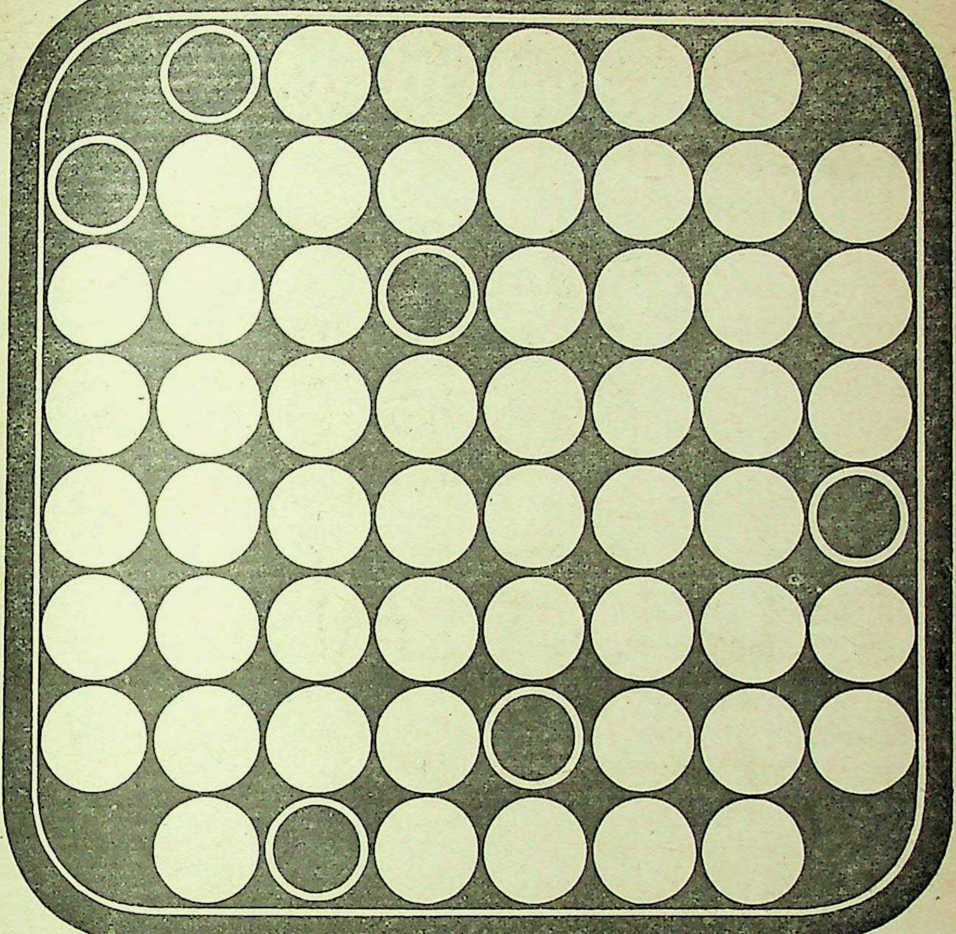

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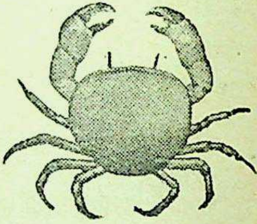

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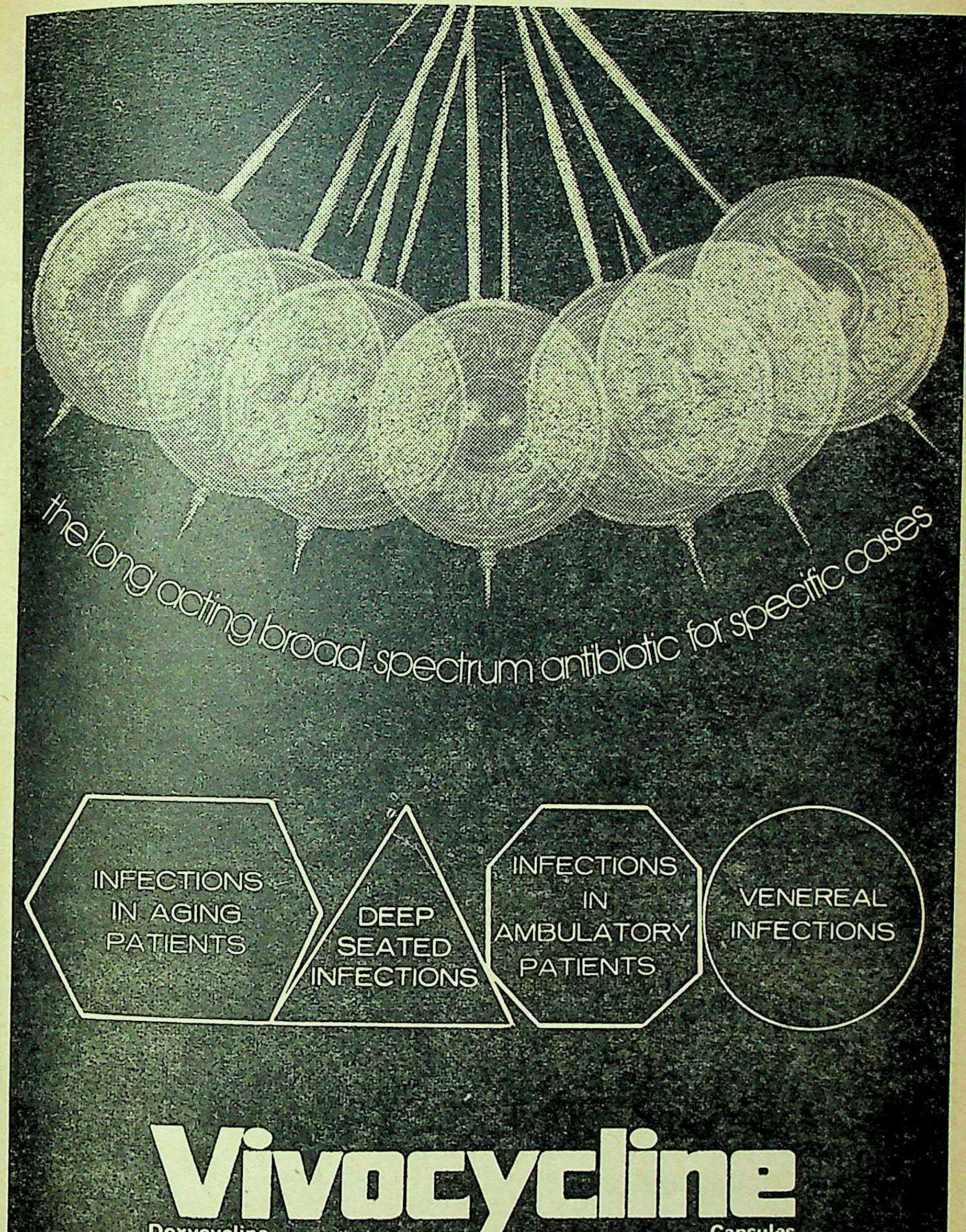

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COMPOSITION :
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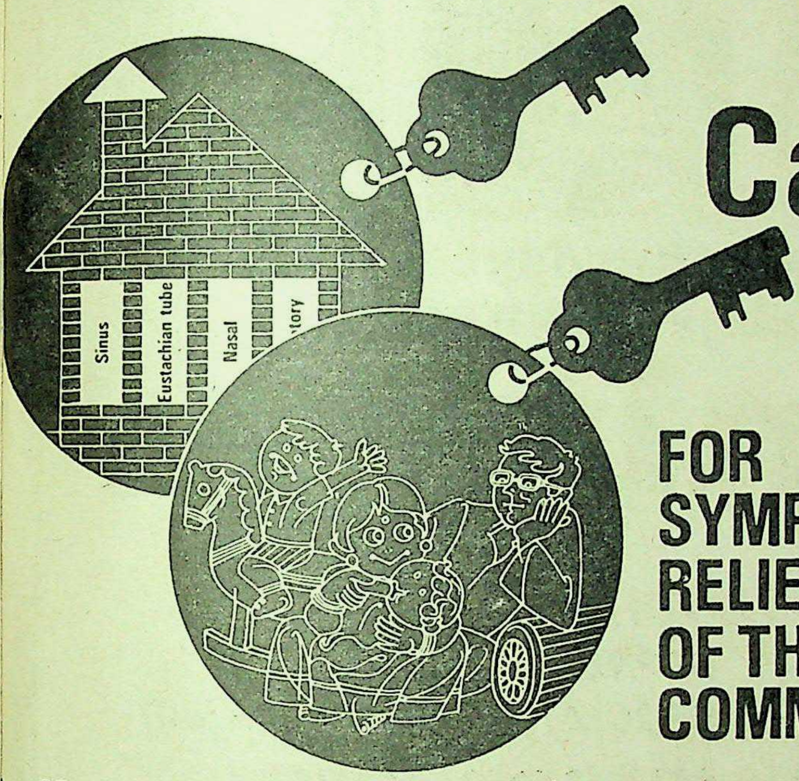

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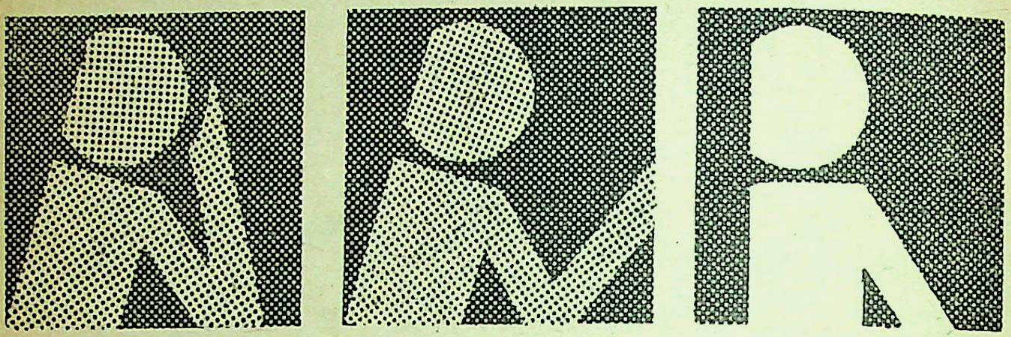

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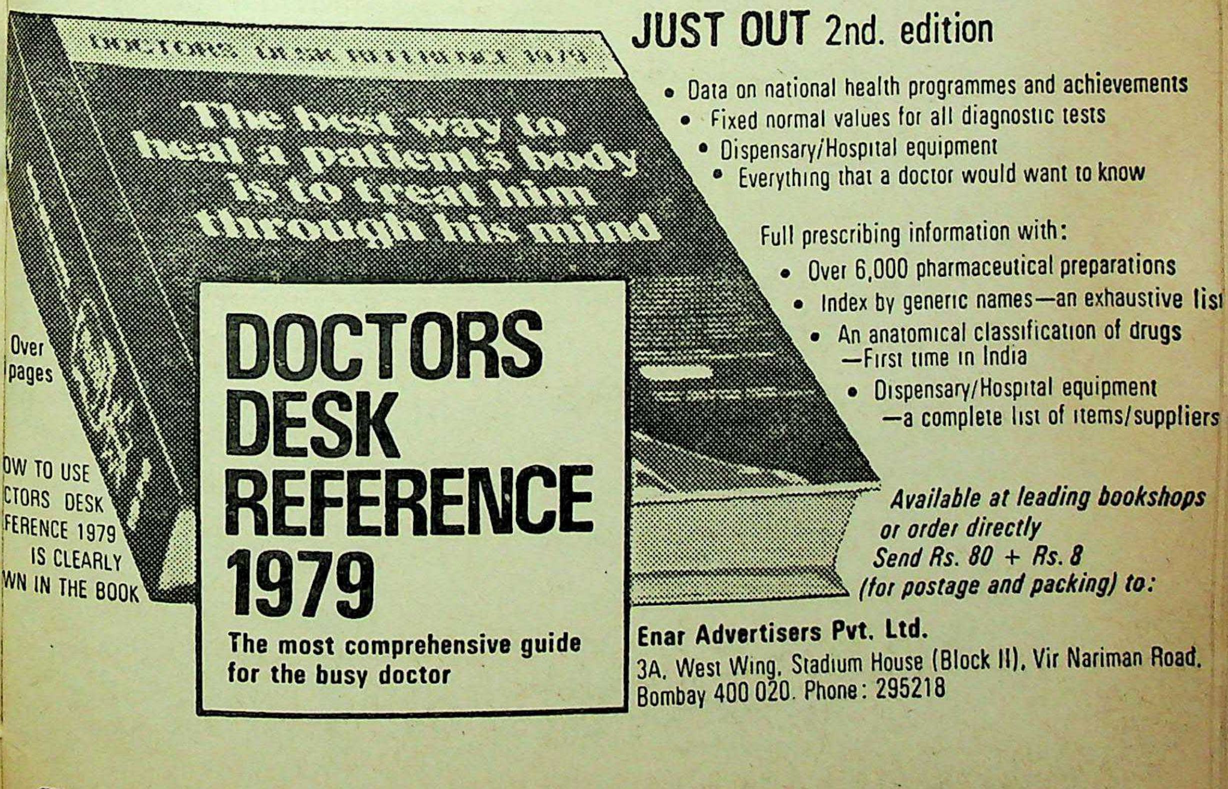
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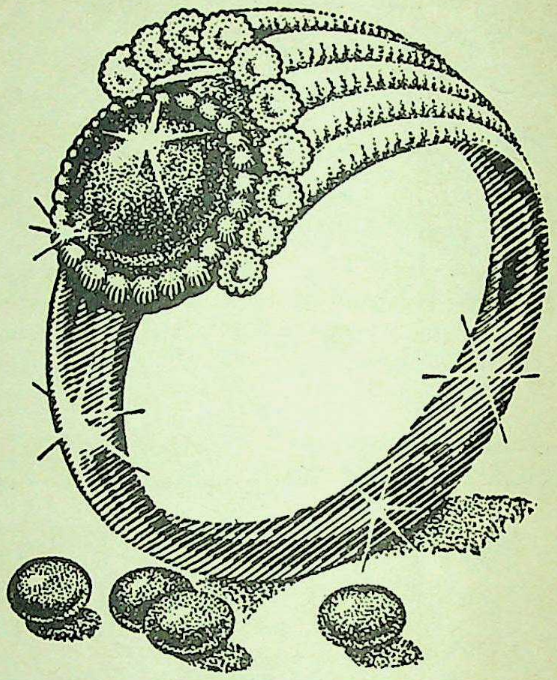

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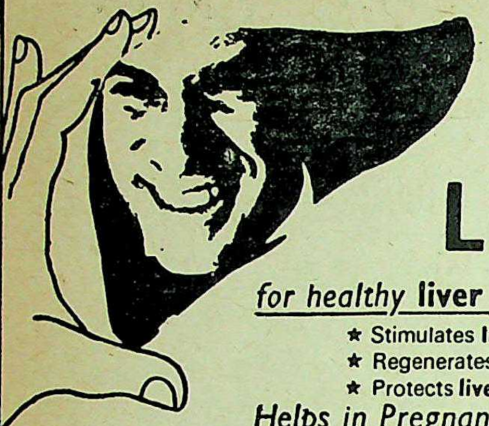

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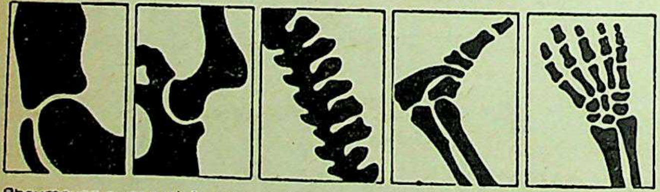

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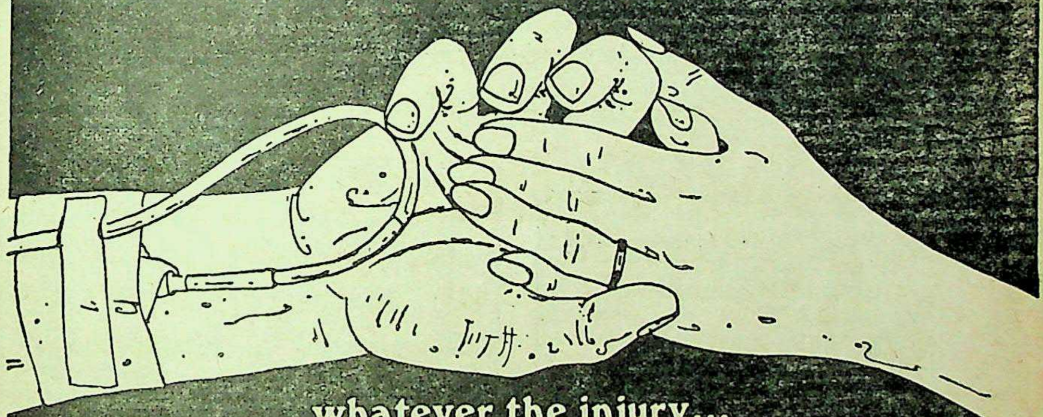

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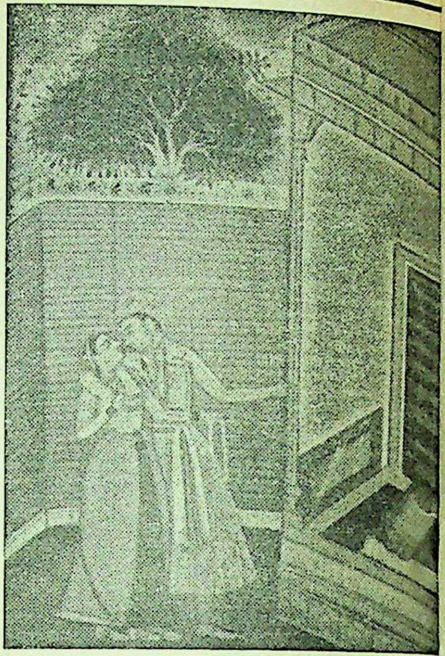

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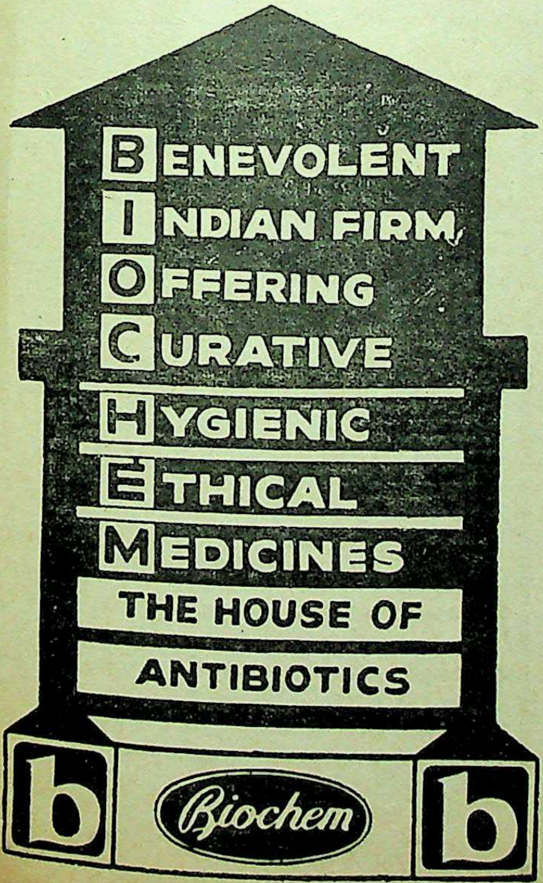

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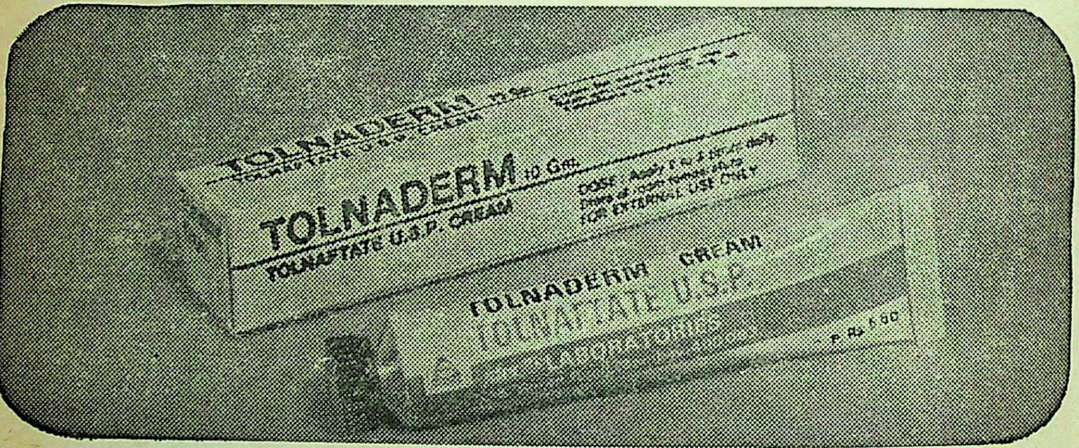

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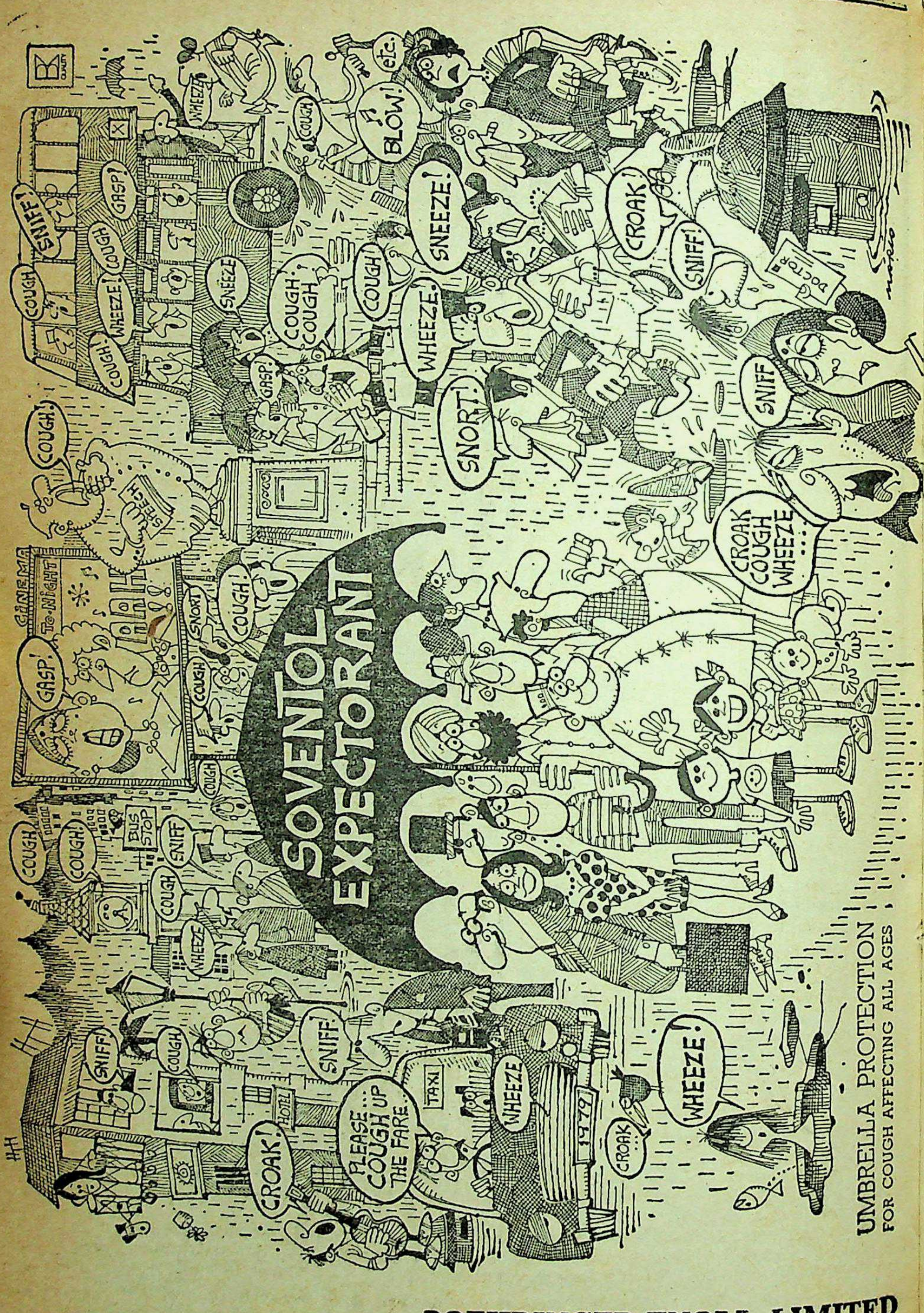
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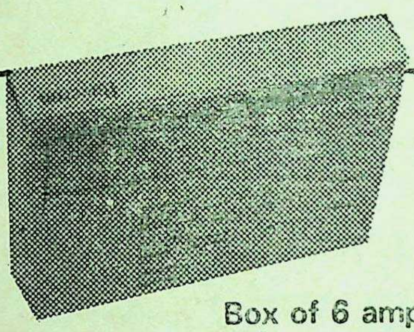

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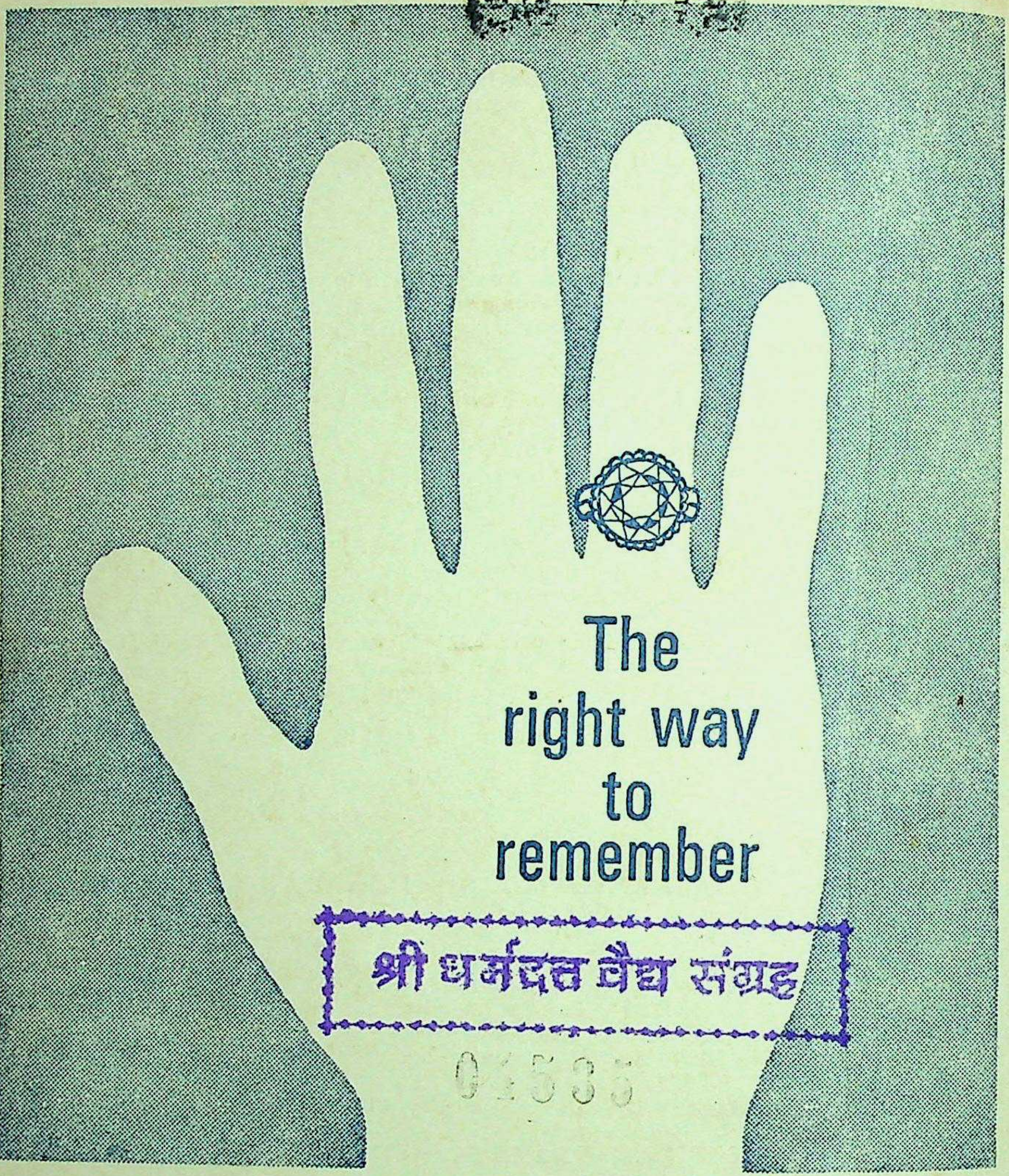

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